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CATALOGUE

OF THE

BATRACHIA SALIENTIA
S. ECAUDATA

IN THE

COLLECTION

OF THE

BRITISH MUSEUM.

5467

SECOND EDITION.

BY

GEORGE ALBERT BOULENGER.

LONDON:
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1882.

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PREFACE.

In the First Edition the object of this 'Catalogue' was stated to be to give a description of the species of Tailless Batrachians in the British Museum, with an indication of the history and origin of all the specimens in that collection, and also an account of the species which were known to exist in other museums but were desiderata in the National collection. This plan has been completely carried out in the present edition; it contains descriptions of, or references to, all the species introduced into the literature, whilst in the former edition no mention was made of species known from imperfect descriptions only.

The rearrangement of this part of the zoological collections, with a new Catalogue, had become very urgent for some time. By the First Edition a fresh impulse to the study of Batrachians was evidently given, many collectors turning their attention to them and discovering a great number of new forms, so that the collection in the British Museum alone has been nearly tripled within the last twenty years. That work fulfilled its purpose, but it has also ceased to be a satisfactory guide in the examination and determination of these animals. Besides, the discovery of almost every new generic type showed that the system proposed in the first edition (complete as it was in itself) was artificial, and that the employment of certain osteological characters, which had been worked out by Cope, Mivart, and Parker, promised a much more natural arrangement. Probably the next step in perfecting this system will be marked by a consideration of the larval stages, the knowledge of which, at present, is so very fragmentary.

On comparing the two editions a great improvement will be found in the series of specimens, which, for many years, have been selected with the view of illustrating the geographical range of the species. Specimens with uncertain localities or without known origin, if no other special interest was attached to them, and especially duplicates, have been eliminated from the collection.

Thus the present work, although it appears in the list of publications of the British Museum as a "second edition," is almost entirely original. It has been prepared by M. Boulenger, Aide-Naturalist in the Royal Belgian Museum; and I feel confident that zoologists will thankfully acknowledge the industry and ability with which the author has performed the difficult task entrusted to him by the Trustees.

ALBERT GÜNTHER,
Keeper of the Department of Zoology.

British Museum,
February 1, 1882.

INTRODUCTION.

The latest general work on Frogs—'Catalogue of the Batrachia Salientia in the British Museum,' published in 1858—contains the descriptions of 283 species. The present volume contains the descriptions of 800 species, more than two thirds of which have been seen by the author.

In 1858 the Collection of Tailless Batrachians in the British Museum contained 214 species, represented by 1691 specimens. Ten years later the number of species had increased to 313[*]. The two numbers amount now to 522 and 4692 respectively.

The classification adopted here is derived from that proposed by Mr. E. D. Cope; but it has been modified in many respects. It appears to the author undeniable that the principles of classification laid down by Mr. Cope are more in accordance with the natural affinities of the genera of Tailless Batrachians than those employed by other authors; this is amply proved by all we know of their geographical distribution, development, and physiology.

An objection has been made to the adoption of this system, but on a rather trivial ground. It is the supposed difficulty of ascertaining osteological characters; and quite recently Dr. P. Brocchi[†] questions whether it is possible to apply in descriptive zoology a classification that requires the sacrifice of one or several of the specimens. But, in reality, such a sacrifice need not be made, as very little skill is required to obtain the necessary information without serious injury to the specimen. Herpetologists have long been in the habit of making an incision in the skin of the pelvic region for the purpose of ascertaining whether the diapophyses of the sacral vertebra are dilated or not; a slit made in the same manner along the thorax will show the sternal characters, and another (which can be sewn up again) along the side of the body will suffice for the examination of the structure of the vertebral column.

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[*] *Cf.* Günther, P. Z. S. 1868, p. 478.

[†] Mission Scientif. au Mexique, Batraciens.

Few authors agree as to the terminology of the elements of the sternal apparatus. That given by Prof. W. K. Parker in his work on the Shoulder-girdle and Sternum has been followed throughout in this Catalogue.

The coloration is described from spirit-specimens, should even the life-coloration be known. When the size is stated, it is always that of the largest specimen in the British Museum.

The affixes to the names of donors &c., in the third column of the list of specimens, may be explained as follows:—"[P.]" signifies "Presented by;" "[C.]" = "Collected by;" "[E.]" = "Obtained by exchange." Where none of these signs are employed, the specimens were purchased.

G. A. BOULENGER.

British Museum,
Jan. 30, 1882.

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CATALOGUE

OF

BATRACHIA ECAUDATA.

BATRACHIA.

Order I. ECAUDATA.

In the perfect state, four limbs and no tail.

Suborder I. PHANEROGLOSSA.

Eustachian tubes separated; a tongue.

Series A. FIRMISTERNIA.

Coracoids firmly united by a simple epicoracoid cartilage; precoracoids, if present, resting with their distal extremity upon the coracoids, or connected with the latter by the epicoracoid cartilage.

Fam. 1. **Ranidæ.** Upper jaw toothed; diapophyses of sacral vertebra cylindrical, or very slightly dilated ...... p. 3.

Fam. 2. **Dendrobatidæ.** Maxillary teeth none; diapophyses of sacral vertebra not dilated .... p. 140.

Fam. 3. **Engystomatidæ.** Maxillary teeth none; diapophyses of sacral vertebra dilated .... p. 146.

Fam. 4. **Dyscophidæ.** Upper jaw toothed; diapophyses of sacral vertebra dilated .... p. 179.

Series B. ARCIFERA.

Coracoids and precoracoids connected by an arched cartilage (the epicoracoid), that of the one side overlapping that of the other.

Fam. 5. **Cystignathidæ.** Upper jaw toothed; diapophyses of sacral vertebra cylindrical, or slightly dilated .... p. 183.

Fam. 6. **Dendrophryniscidæ.** Maxillary teeth none; diapophyses of sacral vertebra not dilated .... p. 273.

Fam. 7. **Bufonidæ.** Maxillary teeth none; diapophyses of sacral vertebra dilated .... p. 274.

Fam. 8. **Hylidæ.** Upper jaw toothed; diapophyses of sacral vertebra dilated; terminal phalanges claw-shaped.. p. 330.

Fam. 9. **Pelobatidæ.** Upper jaw toothed: diapophyses of sacral vertebra strongly dilated; ribs none .... p. 432.

Fam. 10. **Discoglossidæ.** Upper jaw toothed; diapophyses of sacral vertebra dilated; short ribs articulated to the anterior diapophyses .... p. 444.

Fam. 11. **Amphignathodontidæ.** Both jaws toothed: diapophyses of sacral vertebra dilated .... p. 449.

Fam. 12. **Hemiphractidæ.** Both jaws toothed; diapophyses of sacral vertebra not dilated .... p. 451.

Suborder II. AGLOSSA.

Eustachian tubes united into a single ostium pharyngium; no tongue.

Fam. 13. **Dactylethridæ.** Upper jaw toothed .... p. 456.

Fam. 14. **Pipidæ.** Teeth none .... p. 458.

Suborder I. PHANEROGLOSSA.

Phaneroglossa, part., *Wagler, Syst. Amph.*
Phaneroglosses, *Dum. & Bibr. Erp. Gén.* viii.
Opisthoglossa and Proteroglossa, *Günther, Cat. Batr. Sal.*

Eustachian tubes separated; a tongue.

All the Frogs of this division, as far known, possess in the advanced larval state one spiraculum only, or opercular slit; it is situated on the left side, except in the *Discoglossidæ*, in which it is situated in the middle of the thoracic region.

A. FIRMISTERNIA.

Bufoniformia, part., and Raniformia, *Cope, Nat. Hist. Rev.* 1865.
Raniformia and Gastrechmia, *Cope, Journ. Ac. Philad.* (2) vi. 1867.
Raniformia, Firmisternia, and Gastrechmia, *Cope, Check-list of N. Amer. Batr. & Rept., Bull. U.S. Nat. Mus.* i. 1877.

Coracoids firmly united by a simple epicoracoid cartilage; precoracoids, if present, resting with their distal extremity upon the coracoids, or connected with the latter by the epicoracoid cartilage.

1. RANIDÆ.

Ranidæ, part., Cystignathidæ, part., Polypedatidæ, Hylodidæ, part., *Günth. Cat. Batr. Sal.*

Ranidæ, *Cope, Nat. Hist. Rev.* 1865.

Colostethidæ and Ranidæ, *Cope, Journ. Ac. Philad.* (2) vi. 1867.

Polypedatidæ, part., and Ranidæ, part., *Mivart, Proc. Zool. Soc.* 1869.

Upper jaw toothed; diapophyses of sacral vertebra not, or but very slightly, dilated.

The members of this family show no great differences in the structure of the sternal apparatus. The precoracoids are always present, their axis being parallel with that of the coracoids, and their distal extremity resting upon that of the latter. The precoracoids are much weaker than the coracoids. In most genera an omosternum and a sternum are well developed and furnished with a bony style. In *Oxyglossus*, *Hylixalus*, and *Prostherapis* the sternum lacks the bony style, and so does also the omosternum in *Nannophrys* and *Phyllodromus*. In *Colostethus*, according to Cope, the omosternum is totally absent.

The vertebræ are procœlian. The coccyx is attached to two condyles. There are no ribs.

A fronto-parietal fontanelle is constantly absent.

The distal phalanges may be simple, pointed, or subtriangular, **T**-shaped, **Y**-shaped, or even claw-shaped (*Hylambates*), the latter structure being met with in the *Hylidæ*, *Amphignathodontidæ*, and *Hemiphractidæ* only.

Synopsis of the Genera.

Pupil horizontal; tongue entire; toes webbed; outer metatarsal separated by web; sternum without bony style; omosternum with a bony style . . . . 1. **Oxyglossus**, p. 5.

Pupil horizontal; tongue more or less deeply emarginate; vomerine teeth; fingers perfectly free, toes webbed; outer metatarsals separated by web; omosternum and sternum with a bony style.
2. **Rana**, p. 6.

Characters of *Rana*, but the fingers more or less webbed.
3. **Rhacophorus**, p. 73.

Characters of *Rhacophorus*, but the two inner fingers opposite to the two outer . . . . 4. **Chiromantis**, p. 92.

Pupil horizontal; tongue deeply emarginate; vomerine teeth none; outer metatarsals separated by a groove or narrow web; omosternum and sternum with a bony style.
5. **Ixalus**, p. 93.

Pupil horizontal; tongue deeply emarginate; vomerine teeth; fingers free, toes free or slightly webbed; outer metatarsals united or separated by a groove; omosternum and sternum with a bony style . . . . 6. **Cornufer**, p. 107.

Pupil horizontal; tongue deeply emarginate; vomerine teeth none; toes webbed; outer metatarsals separated by web; omosternum and sternum with a bony style . . 7. **Phrynobatrachus**, p. 111.

Pupil vertical; tongue deeply emarginate; vomerine teeth; toes webbed; outer metatarsals separated by web; omosternum and sternum with a bony style . . . . . . 8. **Nyctibatrachus**, p. 113.

Pupil vertical; tongue rather deeply emarginate; vomerine teeth; toes free; outer metatarsals separated by a groove; omosternum and sternum slender, cartilaginous . 8 *a*. **Nannobatrachus**, p. 470.

Pupil horizontal; tongue deeply emarginate; vomerine teeth; toes free; outer metatarsals united; omosternum and sternum without bony style . . . . 9. **Nannophrys**, p. 114.

Pupil horizontal; tongue heart-shaped; vomerine teeth none; fingers free, toes nearly free; outer metatarsals united; omosternum and sternum with a bony style. . . 10. **Arthroleptis**, p. 116.

Pupil horizontal; tongue heart-shaped; vomerine teeth none; fingers and toes more or less webbed; outer metatarsals united; omosternum and sternum with a bony style.
11. **Rappia**, p. 119.

Characters of *Rappia*, but the pupil vertical.
12. **Megalixalus**, p. 128.

Pupil vertical; tongue heart-shaped; vomerine teeth; fingers free, toes free or nearly so, the tips not dilated; outer metatarsals united; omosternum and sternum with a bony style.
13. **Cassina**, p. 131.

Pupil vertical; tongue deeply emarginate; vomerine teeth; tips of fingers and toes dilated, the terminal phalanges claw-shaped; outer metatarsals united; omosternum and sternum with a bony style. . . . . 14. **Hylambates**, p. 132.

Pupil horizontal; tongue heart-shaped; vomerine teeth none; toes webbed; outer metatarsals united; omosternum with a bony style; sternum cartilaginous . . . . 15. **Hylixalus**, p. 137.

Characters of *Hylixalus*, but the tongue elliptic, entire, and the toes nearly free . . . . 16. **Prostherapis**, p. 138.

Characters of *Prostherapis*, but the omosternum without bony style. . . . . 17. **Phyllodromus**, p. 139.

Characters of the two latter genera, but no omosternum.
18. **Colostethus**, p. 140.

1. OXYGLOSSUS.

Oxyglossus, *Tschudi, Batr.* p. 85; *Dum. & Bibr.* viii. p. 332; *Günth. Cat.* p. 6; *Cope, Nat. Hist. Rev.* 1865, p. 117.
Phrynoglossus, *Peters, Mon. Berl. Ac.* 1867, p. 29.
Microdiscopus, *Peters, eod. loc.* 1877, p. 422.

Pupil horizontal. Tongue narrow, entire, and free behind. Vomerine teeth none. Tympanum indistinct. Fingers free; toes webbed, the tips not dilated into regular disks. Outer metatarsals separated by web. Omosternum with a bony style; sternum a cartilaginous plate. Terminal phalanges simple.

East Indies.

Synopsis of the Species.

Tongue pointed behind .... 1. *lima*, p. 5.
Tongue rounded behind; skin nearly smooth; a single metatarsal tubercle .... 2. *lævis*, p. 6.
Tongue rounded behind; skin warty above; two metatarsal tubercles................ 3. *martensii*, p. 6.

1. Oxyglossus lima.

Oxyglossus lima, *Günth. Cat.* p. 6.
Oxyglossus lima, *Tschudi, Batr.* p. 85; *Dum. & Bibr.* p. 334, pl. 86. f. 4; *Günth. Rept. Brit. Ind.* p. 401; *Stoliczka, Proc. As. Soc.* 1870, p. 272, and 1872, p. 101.

Tongue elongate, extensively free and pointed behind. Habit stout. Head small; snout rather pointed; interorbital space narrower than the upper eyelid. Fingers rather slender, pointed, first not extending beyond second; toes pointed, fourth not very much longer than third and fifth, broadly webbed; subarticular tubercles very small; two conical metatarsal tubercles; a small tarsal tubercle just below the tibio-tarsal articulation. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout. Above with numerous small warts, beneath with symmetrical rows of pores. Brownish above, with darker markings; sometimes a light vertebral stripe; whitish below, with a dark brown band beneath the arm and along the hinder side of the thigh, and a brown L-shaped mark on each side of the lower belly. Male with an internal subgular vocal sac.

Java; E. India; S. China.

a–c. ♂ ♀.	Java.	Leyden Museum.
d. ♀.	Java.	Dr. Bleeker.
e. Several spec.: ♂, ♀, & hgr.	Siam.	M. Mouhot [C.].
f–g. Hgr.	Gamboja.	M. Mouhot [C.].
h. ♀.	Pegu.	
i. ♀.	Birmah.	T. C. Jerdon, Esq. [P.].
k. ♀.	China.	J. R. Reeves, Esq. [P.].
l. ♀.	China?	— Adams, Esq. [C.].

2. Oxyglossus lævis.

Oxyglossus lævis, *Günth. Cat.* p. 7, pl. i. f. A.
Phrynoglossus lævis, *Peters, Mon. Berl. Ac.* 1867, p. 29.
Oxyglossus lævis, *Stoliczka, Proc. As. Soc.* 1870, p. 273, and 1872 p. 101.
Microdiscopus sumatranus, *Peters, Mon. Berl. Ac.* 1877, pp. 422, 682.

Tongue oval, rounded behind, free in its posterior third. Habit stout. Head small; snout rounded; interorbital space nearly as broad as the upper eyelid. Fingers short, with blunt tips, first not extending beyond second; toes broadly webbed, fourth not very much longer than third and fifth, the tips dilated into very small disks; subarticular tubercles of fingers moderate, of toes small; a single, compressed, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout, or somewhat beyond. Skin nearly smooth. Brown above, with or without rather indistinct darker spots; sometimes a light vertebral line; beneath whitish, speckled with brown on the throat and under the limbs. Male with an internal subgular vocal sac.

Philippines; Sumatra; E. India.

a–d. ♂, ♀, & hgr.	Laguna del Bay.	Dr. Meyer [C.].
e, f. ♀.	Philippines.	(Types of *O. lævis.*)
g. Hgr.	Pegu.	W. Theobold, Esq. [P.].
h–i. Hgr.	Birmah.	W. Theobald, Esq. [P.].
k. Hgr.	Birmah.	T. C. Jerdon, Esq. [P.].

3. Oxyglossus martensii.

Phrynoglossus martensii, *Peters, Mon. Berl. Ac.* 1867, p. 29.

Allied to *O. lævis*, but the web between the toes deeply emarginate, a rather indistinct outer metatarsal tubercle, and warts on the back and limbs. A dark band between the eyes; grey beneath, the throat with white punctulations.

Bangkok, Siam.

2. RANA*.

Rana, sp., *Linn. S. N.* i. p. 354.
Rana, *Wagler, Syst. Amph.* p. 203; *Tschudi, Batr.* p. 78; *Dum. & Bibr. Erp. Gén.* viii. p. 335; *Günth. Cat. Batr. Sal.* p. 8; *Cope, Nat. Hist. Rev.* 1865, p. 117.
Hylarana, *Tschudi, l. c.* p. 78; *Günth. l. c.* p. 71; *Cope, l. c.*

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* Uncertain species:—

1. *Rana aurora*, Baird & Gir. Proc. Ac. Philad. 1862, p. 174, and U.S. Explor. Exped., Herp. p. 18, pl. 11. f. 1–6.—Puget Sound.
2. *Rana draytonii*, Baird & Gir. l. c. p. 174, and l. c. p. 23, pl. 11. f. 19–24.—California.
3. *Hylarana mindanensis*, Girard, U.S. Explor. Exped., Herp. p. 52.—Caldera.

Polypedates, sp., *Tschudi, l. c.* p. 78; *Günth. l. c.* p. 77.
Strongylopus, *Tschudi, l. c.* p. 79.
Pyxicephalus, *Tschudi, l. c.* p. 83; *Cope, l. c.*
Pyxicephalus, sp., *Dum. & Bibr. l. c.* p. 442.
Limnodytes, *Dum. & Bibr. l. c.* p. 510.
Pelophylax, *Fitzing. Syst. Rept.* i. p. 31.
Tomopterna (*Bibr.*), *Günth. l. c.* p. 7.
Sphærotheca, *Günth. l. c.* p. 20.
Ranula, *Peters, Mon. Berl. Ac.* 1859, p. 402.
Dicroglossus, *Günth. Proc. Zool. Soc.* 1860, p. 158; *Cope, l. c.*
Hoplobatrachus, *Peters, Mon. Berl. Ac.* 1863, p. 449; *Cope, l. c.*
Staurois, sp., *Cope, l. c.*
Amolops, *Cope, l. c.*
Pohlia, *Steindachn. Novara, Amph.* p. 15.
Pachybatrachus (*non Keferstein*), *Mivart, Proc. Zool. Soc.* 1868, p. 559.
Clinotarsus, *Mivart, ibid.* 1869, p. 227.
Trypheropsis, *Cope, Proc. Ac. Philad.* 1868,p. 117.
Maltzania, *Boettger, Abhandl. Senck. Ges.* xii. 1881, p. 417.

Pupil horizontal. Tongue free and deeply notched behind†. Vomerine teeth. Tympanum distinct or hidden. Fingers free; toes webbed, with simple or dilated tips. Outer metatarsals separated by web. Omosternum and sternum with a strong bony style. Terminal phalanges acute, transversely dilated or T-shaped.

Cosmopolitan, except the southern parts of South America and New Zealand; one species from the extreme north of Australia.

The study of the numerous species included here in *Rana* shows the impossibility of dividing them into genera, or even subgenera, according to the dilatation or non-dilatation of the tips of the fingers and toes. The extreme forms, viz. *Rana hexadactyla* and *R. afghana*, show indeed a very marked difference respecting the shape and structure of the fingers and toes—the former having them pointed; the latter dilated into very large disks supported by regularly T-shaped phalanges. But, when we meet with such forms as *R. malabarica*, *R. curtipes*, *R. inguinalis*, &c., we must hesitate before referring them to the "Platydactyla" or to the "Oxydactyla," and, in fact,

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4. *Limnodytes lividus*, Blyth, Journ. As. Soc. xxiii. p. 299.—Colombo.
5. *Limnodytes nigrovittatus*, Blyth, ibid. xxiv. p. 718.—Tenasserim.
6. *Rana altilabris*, Blyth, l. c. p. 720.—Pegu.
7. *Rana neweraellia*, Kelaart, Prodr. Faun. Zeyl. i. p. 192.—Ceylon.
8. *Limnodytes mutabilis*, Kelaart, ibid. ii. p. 19.—Colombo.
9. *Limnodytes maculata*, Kelaart, l. c.—Galle.
10. *Rana nebulosa*, Hallow. Proc. Ac. Philad. 1860, p. 504.—Hongkong.
11. *Rana multistriata*, Hallow. l. c.—Hongkong.
12. *Rana adtrita*, Troschel, in Müller's Wirbelth. Mex. p. 82.—Mexico.
13. *Rana missuriensis*, Wied, Reise N. Amer. i. p. 115.—Missouri.
14. *Rana spinidactyla*, Cope, Proc. Ac. Philad. 1865, p. 197.—Natal.
15. *Pyxicephalus frithii*, Theobald, Cat. Rept. As. Soc. Mus. 1868, p. 81.—Birmah.
16. *Rana circulosa*, Rice & Davis, in Jordan's Man. Vertebr. 2nd edit. p. 255.—Indiana.

† In a few cases the incision is not very deep.

they might just as well be referred to the one as to the other. Besides, the well-known *R. macrodon*, *R. kuhlii*, and others have the tips of the toes dilated into very distinct disks, much more so than several species hitherto referred to *Hylorana*.

I have therefore come to the conclusion that, with regard to the species of this group, the difference in the shape of the fingers and toes cannot be used as generic character, as we should be obliged to place far apart species which, in all other respects, are very much alike. This conclusion was foreseen by Mr. Cope some twelve years ago[*]. Stating that *Hylorana* stands very near *Rana*, he observes that "it is only to be distinguished from it generically, without the interposition of any possible form which would not unite them. The T-shaped phalange in some *Hyloranæ* is so weak, while the expansion of the tip of the same in *Rana temporaria* and others is so distinct, as to render the permanent distinction of the two genera a mere matter of future discovery."

It has long been believed that the shape of the tips of the fingers and toes is always in immediate relation with the mode of life of the Frog; but it now appears that several platydactyle species are entirely terrestrial or aquatic, not arboreal.

Had not the species been so numerous, I would have hesitated to separate *Rana* from *Rhacophorus*, which I characterize by the presence of a more or less developed web between the fingers. Though both genera pass into each other and constitute an uninterrupted series of species, I think that division convenient, it being easy to ascertain whether the fingers are quite free or webbed.

As characterized by Dr. Günther and other authors, the genus *Pyxicephalus*, Tschudi (*Tomopterna* (Bibr.), Gthr.), is supposed to differ from *Rana* by a stouter habit, and especially by the great development of the inner metatarsal tubercle, which is large, compressed, shovel-like, as in *Pelobates*, *Scaphiopus*, &c. Had all the species of *Pyxicephalus* a "large and thick head," and all the species of *Rana* the "metatarsal tubercle blunt," it would certainly be very natural to separate these two forms; but such is not the case, and it will be shown that the genera *Pyxicephalus* and *Rana* can no longer be distinguished.

Prof. Peters established many years ago a new genus, *Hoplobatrachus*, for a Ceylonese Frog which, according to him, is exactly intermediate between *Rana* and *Pyxicephalus*. This supposed new Frog is nothing but a variety of *Rana tigrina*. In this species the inner metatarsal tubercle is generally blunt, half as long as the first toe, or even less; other specimens (from Ceylon, Madras, and Malabar) have the tubercle shovel-shaped as in *Pyxicephalus adspersus*, and about as long as the first toe; other specimens are intermediate. These differences in the shape and size of the inner metatarsal tubercle do not correspond with any important character;

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[*] Proc. Amer. Philos. Soc. xi. 1869, p. 168.

and I therefore do not hesitate to unite *Hoplobatrachus ceylanicus* with *Rana tigrina*.

The common *Rana esculenta* furnishes a similar example in favour of this view. In this species the inner metatarsal tubercle is liable to considerable variation. Some specimens, especially those from S. Europe, N. Africa, and W. Asia, exhibit it blunt, small, one third the length of the first toe; most of those from Northern and Central Europe have it compressed, about half as long as the first toe; most of the Chinese and Japanese specimens have it still stronger, very frequently quite as long as the first toe, and closely resembling the spur of *Pelobates*. I may add that I am inclined to consider *Hoplobatrachus reinhardti*, Peters, as based upon one of these oriental specimens of *R. esculenta*; and that I saw some time ago in the Paris Museum a large specimen of the same species labelled *Hoplobatrachus davidi*, sp. n.

On the other hand, in some species of *Pyxicephalus*, viz. *P. natalensis* and *P. rugosus*, the metatarsal tubercle is not more developed than in that form of *R. esculenta* which is intermediate between the extremes.

As regards the stouter habit and the thicker head of *Pyxicephalus* as compared with *Rana*, we must bear in mind that the latter genus includes some very stout species, and that *P. natalensis* has the head very much like the majority of the species of *Rana*.

Synopsis of the Species.

I. PALÆARCTIC SPECIES.

A. Tips of fingers and toes not dilated; belly smooth.

1. Vomerine teeth between the choanæ; a glandular lateral fold; toes entirely webbed.

Fingers pointed; glandular lateral fold as broad as the upper eyelid; a dark band along the hinder side of the thighs .... 38. *plancyi*, p. 37.
Fingers blunt; glandular lateral fold narrower than the upper eyelid; hinder side of thighs marbled .... 39. *esculenta*, p. 38.
Upper eyelid glandular and distinctly porous 40. *porosa*, p. 40.

2. Vomerine teeth between the choanæ; no glandular lateral fold; toes incompletely webbed.

Skin very warty .... 33. *rugosa*, p. 35.

3. Vomerine teeth extending beyond the level of the hinder edge of the choanæ; a glandular lateral fold; toes incompletely webbed; a dark temporal spot.

a. Tibio-tarsal articulation not or hardly reaching the tip of the snout.

Inner metatarsal tubercle blunt; snout obtuse............................ 50. *temporaria*, p. 44.

Inner metatarsal tubercle compressed; snout pointed . . . . 51. *arvalis*, p. 45.

b. Tibio-tarsal articulation reaching beyond the tip of the snout.

Tympanum not two thirds the width of the eye; first finger not extending beyond second; belly spotted . . . . 53. *iberica*, p. 46.
Tympanum hardly two thirds the width of the eye; belly spotted . . . . 54. *latastii*, p. 46.
Tympanum nearly as large as the eye, close to it; belly immaculate . . . . 55. *agilis*, p. 46.
Snout very long; no outer metatarsal tubercle . . . . 57. *japonica*, p. 47.

B. Tips of fingers and toes dilated into large disks; belly granulate . . . . 107. *buergeri*, p. 73.

II. American Species.

A. Tips of toes not dilated.

1. The web extends to the tip of the fourth toe.

Tympanum nearly as large as the eye; tibio-tarsal articulation not reaching the eye . . . . 34. *montezumæ*, p. 35.
Tympanum as large as or larger than the eye; tibio-tarsal articulation reaching the eye . . . . 35. *catesbiana*, p. 36.

2. Toes at least three-fifths webbed, the web not extending to the tip of the fourth toe.

a. Tympanum as large as or larger than the eye.

First finger not extending beyond second . . 36. *clamata*, p. 36.

b. Tympanum smaller than the eye.

α. Vomerine teeth between the choanæ.

Habit stout; skin porous . . . . 37. *septentrionalis*, [p. 37.
Head moderate; tympanum nearly as large as the eye; glandular lateral fold moderate . . . . 43. *halecina*, p. 41.
Head moderate; male with external vocal sacs . . . . 41. *utricularia*, p. 40.
Head large; male with external vocal sacs . 42. *areolata*, p. 41.
Tympanum nearly as large as the eye; glandular lateral fold very broad . . . . . . 44. *palustris*, p. 42.
Tympanum about half the size of the eye . . 45. *macroglossa*, p. 42.
Tympanum nearly as large as the eye; first finger not longer than second . . . . 46. *maculata*, p. 42.

Tympanum two thirds the size of the eye; first finger extending scarcely beyond second; head much longer than broad	47. *lecontii*, p. 42.
Tympanum two thirds the size of the eye; snout short, rounded	48. *nigricans*, p. 43.

β. Vomerine teeth extending beyond the level of the hinder edge of the choanæ.

Tibio-tarsal articulation not reaching the tip of the snout; a conical outer metatarsal tubercle	49. *pretiosa*, p. 43.
Tibio-tarsal articulation not reaching the tip of the snout; no outer metatarsal tubercle	52. *cantabrigensis*, [p. 45.
Tibio-tarsal articulation reaching the tip of the snout, or beyond; a rounded outer metatarsal tubercle	56. *silvatica*, p. 47.

3. Toes hardly half webbed.

Habit stout	32. *capito*, p. 34.

B. Tips of toes dilated into small disks.

Toes entirely webbed; first finger longer than second	59. *palmipes*, p. 48.
Toes incompletely webbed; tympanum as large as the eye	60. *copii*, p. 49.
First finger not longer than second	61. *nigrilatus*, p. 49.
Toes entirely webbed; skin shagreened above	62. *chrysoprasina*, [p. 49.
Toes incompletely webbed; tympanum two thirds the width of the eye; skin shagreened above	63. *cœruleopunctata*, [p. 50.

III. INDIAN AND AUSTRALIAN SPECIES.

A. Fingers and toes acutely pointed, the latter very broadly webbed.

First finger extending a little beyond second	1. *hexadactyla*, p. 17.
First finger not extending beyond second	2. *cyanophlictis*, p. 17.

B. Fingers pointed or blunt; toes blunt or slightly dilated at the tips.

1. Toes more than half webbed.

a. Tympanum indistinct or hidden.

First finger not extending quite as far as second; upper eyelid very narrow; skin of back with transverse plaits	5. *corrugata*, p. 19.

First finger extending a little beyond second; upper eyelid narrow .... 6. *kuhlii*, p. 20.

Head large; tibio-tarsal articulation reaching nearly the tip of the snout........ 7. *laticeps*, p. 20.

Toes not entirely webbed; tibio-tarsal articulation reaching a little beyond the tip of the snout .... 8. *yunnanensis*, p. 21.

A glandular lateral fold; tibio-tarsal articulation reaching the tip of the snout or beyond .... 10. *liebigii*, p. 21.

b. Tympanum perfectly distinct.

Vomerine teeth in two oblique series extending much beyond the choanæ; no tooth-like prominence in the lower jaw . 13. *grunniens*, p. 23.

Vomerine teeth in two oblique series commencing from the inner front edge of the choanæ .... 14. *macrodon*, p. 24.

Vomerine teeth in two oblique oval groups commencing on a level with the hinder edge of the choanæ .... 15. *modesta*, p. 25.

Tympanum as large as the eye.......... 16. *plicatella*, p. 26.

A much developed membranaceous fringe along the outer side of the fifth toe; interorbital space narrower than the upper eyelid .... 17. *tigrina*, p. 26.

Tibio-tarsal articulation reaching the tip of the snout; upper parts strongly warty . 20 *verrucosa*, p. 29.

Habit slender; a glandular lateral fold .. 58. *guentheri*, p. 48.

2. Toes not more than half webbed.

Inner metatarsal tubercle blunt ... . 19. *gracilis*, p. 28.

Inner metatarsal tubercle shovel-shaped; vomerine teeth placed transversely behind the choanæ. .... 31. *khasiana*, p. 34.

Inner metatarsal tubercle shovel-shaped; tarso-metatarsal articulation reaching a little beyond the tip of the snout ...... 21. *rufescens*, p. 29.

Inner metatarsal tubercle shovel-shaped; tympanum two thirds the size of the eye 27. *dobsonii*, p. 32.

Inner metatarsal tubercle shovel-shaped; tympanum half the size of the eye .... 26. *breviceps*, p. 32.

C. Tips of fingers and toes more or less dilated.

1. A glandular lateral fold.

a. Tips of fingers and toes simply swollen.

Fourth toe about as long as the distance from vent to tympanum .... 72. *macrodactyla*, p. 54.

Toes rather more than half webbed; tibio-tarsal articulation reaching the tip of the snout, or nearly so far .... 81. *macularia*, p. 60.

Toes half webbed; tibio-tarsal articulation reaching the eye.................... 82. *malabarica*, p. 60.

Toes nearly entirely webbed; tibio-tarsal articulation reaching the eye; head large 84. *curtipes*, p. 61.

Toes nearly entirely webbed; head moderate............................ 78. *margariana*, p. 58.

b. Tips of fingers and toes dilated into regular disks.

α. Vomerine teeth between the choanæ.

Femoro-tibial articulation reaching the tympanum .... 93. *jerboa*, p. 67.

Two rather indistinct metatarsal tubercles; tympanum two thirds the size of the eye: hind limbs with dark cross-bars ...... 85. *alticola*, p. 62.

Two very distinct metatarsal tubercles; tympanum two thirds the size of the eye; hind limbs not cross-barred .... 88. *krefftii*, p. 64.

Two metatarsal tubercles, the inner very prominent and large; hind limbs with dark cross-bars .... 89. *tytleri*, p. 65.

One metatarsal tubercle; hind limbs not cross-barred .... 90. *erythræa*, p. 65.

One metatarsal tubercle; disks of fingers half the size of tympanum............ 91. *chalconota*, p. 66.

β. Vomerine teeth extending beyond the level of the hinder edge of the choanæ.

Interorbital space as broad as the upper eyelid; tympanum three fourths the size of the eye .... 86. *temporalis*, p. 63.

Interorbital space rather narrower than the upper eyelid .... 87. *papua*, p. 64.

Tympanum two thirds the size of the eye . 92. *arfaki*, p. 66.

2. No glandular lateral fold.

a. Vomerine teeth not extending beyond the level of the hinder edge of the choanæ.

Tympanum half the width of the eye; toes nearly entirely webbed; disks very small 73. *andersonii*, p. 55.

Tympanum not quite two thirds the width of the eye; toes hardly half webbed .. 97. *luctuosa*, p. 68.

Tympanum nearly as large as the eye; toes nearly entirely webbed ....101. *celebensis*, p. 70.

Tympanum two fifths the diameter of the eye; toes very broadly webbed; head moderate ....101 *a.* *latopalmata*, [p. 464.

Tympanum about one third the width of the eye; toes very broadly webbed; head much elongate .... 102. *natatrix*, p. 71.

Tympanum two thirds the width of the eye; toes two-thirds webbed; tips of fingers and toes simply swollen; interorbital space as broad as the upper eyelid; skin strongly granulate .... 103. *signata*, p. 71.

Tympanum two thirds the width of the eye; toes two-thirds webbed; tips of fingers and toes simply swollen; interorbital space as broad as the upper eyelid; skin slightly granulate .... 104. *similis*, p. 72.

Tympanum one third the width of the eye; snout shorter than the diameter of the eye; belly granulate .... 106. *mackloti*, p. 72.

Upper surfaces very warty; toes one-fourth webbed .... 77 *a*. *phrynoderma*, [p. 462.

b. Vomerine teeth extending beyond the level of the hinder edge of the choanæ.

α. A free conical papilla on the middle of the tongue; disks of fingers and toes small.

Toes two-thirds webbed .... 74. *beddomii*, p. 55.

Toes half webbed .... 75. *semipalmata*, p. 56.

Toes one-third webbed .... 76. *leptodactyla*, p. 57.

Toes one-third webbed; a black spot on the loin .... 77. *diplosticta*, p. 58.

β. Tongue without papilla; disks large.

Tympanum about half the width of the eye; first finger extending slightly beyond second .... 98. *chloronota*, p. 69.

Tympanum hardly one third the width of the eye; first finger not extending quite so far as second .... 99. *afghana*, p. 69.

Tympanum hardly one third the width of the eye; fingers very long .... 100. *formosa*, p. 70.

Tympanum three fourths the width of the eye 105. *everetti*, p. 72.

γ. Tongue without papilla; disks small.

Tympanum three fifths the width of the eye 108. *glandulosa*, p. 73.

IV. ÆTHIOPIAN SPECIES.

A. Tips of fingers and toes not dilated; inner metatarsal tubercle blunt.

1. Toes at least half webbed.

a. Vomerine teeth in two groups or short series close to the inner front edge of the choanæ.

Toes very broadly webbed; tympanum half the size of the eye .... 3. *ehrenbergii*, p. 18.

Toes very broadly webbed; tympanum hidden .... 4. *crassipes*, p. 19.

Toes entirely webbed; tympanum nearly as large as the eye; a single metatarsal tubercle .... 66. *oxyrhynchus*, p. 51.

Toes entirely webbed, the web not emarginate; tympanum nearly as large as the eye; two metatarsal tubercles .... 67. *longirostris*, p. 52.

Toes nearly entirely webbed; tympanum two thirds the width of the eye; a tarsal and two metatarsal tubercles. .... 68. *trinodis*, p. 52.

Toes two-thirds webbed; tympanum two thirds the width of the eye .... 69. *mascareniensis*, p. 52.

b. Vomerine teeth in two series or groups between the choanæ.

Vomerine teeth in two oblique groups; toes two-thirds webbed.............. 12. *subsigillata*, p. 23.

Vomerine teeth in two oblique series; toes nearly entirely webbed .... 18. *occipitalis*, p. 27.

Vomerine teeth in two transverse series; toes two-thirds webbed .... 65. *angolensis*, p. 50.

c. Vomerine teeth in two groups on a level with the hinder edge of the choanæ.

Toes not quite two-thirds webbed........ 11. *blanfordi*, p. 23.

Toes nearly entirely webbed............ 64. *fuscigula*, p. 50.

2. Toes webbed at the base.

a. Vomerine teeth in two long, nearly straight series on a level with the front edge of the choanæ.

Tibio-tarsal articulation reaching the tip of the snout, or somewhat beyond........ 70. *grayi*, p. 53.

Tibio-tarsal articulation reaching far beyond the tip of the snout .... 71. *fasciata*, p. 54.

b. Vomerine teeth in two oblique series between the choanæ . 83. *galamensis*, p. 61.

B. Tips of fingers and toes not dilated; inner metatarsal tubercle shovel-shaped.

Metatarsal tubercle reaching beyond the tip of the snout .... 22. *tuberculosa*, p. 30.

Metatarsal tubercle reaching nearly the tip of the snout; skin smooth............ 23. *natalensis*, p. 30.

Tympanum rather indistinct; two metatarsal tubercles .... 24. *cordofana*, p. 31.

Tympanum half the size of the eye; skin tubercular	25. *delalandii*, p. 31.
Tympanum nearly as large as the eye; skin smooth	28. *ornata*, p. 33.
Tympanum two thirds or three fourths the size of the eye; back with longitudinal glandular folds	29. *adspersa*, p. 33.
Tympanum larger than the eye; no longitudinal folds	30. *maltzanii*, p. 34.

C. Tips of fingers and toes more or less dilated.

1. A circular flat gland below each thigh on its inner side.

Tympanum hidden	9. *guttulata*, p. 21.
Tympanum distinct; first and second fingers equal	96 *a*. *ulcerosa*, p. 462.
Tympanum distinct; first finger not extending as far as second; tibio-tarsal articulation reaching beyond the eye	96 *b*. *femoralis*, p. 463.

2. No large gland below the thigh.

a. First finger extending beyond second.

A glandular lateral fold; tips of fingers and toes simply swollen	79. *elegans*, p. 59.
A glandular lateral fold; tips of fingers and toes dilated into regular disks; belly smooth	80. *albilabris*, p. 59.
No glandular lateral fold; tibio-tarsal articulation reaching a good deal beyond the tip of the snout	94. *inguinalis*, p. 67.

b. First and second fingers equal.

Toes half webbed; tibio-tarsal articulation not reaching beyond the tip of the snout	73 *a*. *betsileana*, p. 460.
Toes three-fourths webbed; tibio-tarsal articulation not reaching beyond the eye	73 *b*. *curta*, p. 461.
Toes half webbed; tibio-tarsal articulation reaching beyond the tip of the snout	107 *b*. *aspera*, p. 465.

c. First finger not extending as far as second.

Tympanum more than half the diameter of the eye; back smooth	95. *madagascariensis*, p. 67.
Tympanum more than half the diameter of the eye; back granulate	96. *granulata*, p. 68.
Tympanum half the diameter of the eye; toes entirely webbed; back smooth	96 *c*. *cowanii*, p. 463.
Tympanum half the diameter of the eye; toes somewhat more than half webbed; back with narrow glandular folds	107 *a*. *plicifera*, p. 464.

1. Rana hexadactyla.

Rana hexadactyla, *Günth. Cat.* p. 11.
Rana hexadactyla, *Lesson in Bélang. Voy. Ind. Or., Rept.* p. 331; *Tschudi, Batr.* p. 80; *Günth. Rept. Brit. Ind.* p. 405; *Steindachn. Novara, Amph.* p. 19; *Günth. Proc. Zool. Soc.* 1875, p. 568.
Dactylethra bengalensis, *Lesson, Ill. Zool.* pl. 47.
Rana cutipora, *Dum. & Bibr.* p. 339.
—— robusta, *Blyth, Journ. As. Soc.* 1854, p. 298.

Vomerine teeth in two oblique series extending beyond the hinder edge of the choanæ. Head moderate; snout rather pointed; canthus rostralis indistinct; interorbital space much narrower than the upper eyelid; tympanum distinct, as large as the eye. Fingers slender, pointed, first extending a little beyond second; toes webbed to the tips, which are pointed; fourth toe not very much longer than third or fifth; subarticular tubercles of fingers and toes very small; inner metatarsal tubercle small, conical; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, with more or less distinct rows of pores round the neck, sides, and belly. Brown above; sometimes a light vertebral line; two blackish streaks on the hinder side of the thighs, sometimes indistinct; young beautifully striped. Male with two external vocal vesicles opening by two slits beneath the angles of the mouth.

India.

a. Hgr. ♀.	Nepal.	Dr. Scully [C.].
b. Many spec., yg.	Malabar.	Col. Beddome [P.]. (As typical of *Rana vittata.*)
c–d. ♂ ♀.	Madras.	T. C. Jerdon, Esq. [P.].
e. Skeleton, ♀.	India.	Sir A. Smith [P.].
f. Stuffed.	India.	
g–i. Yg.	——?	T. C. Jerdon, Esq. [P.]. (As *Pyxicephalus pluvialis.*)
k, l. ♀ & hgr.	Ceylon.	
m–n. ♀ & hgr. ♂.	Ceylon.	Sir A. Smith [P.].
o. Yg.	Ceylon.	
p. Hgr. ♀.	S. Ceylon.	G. H. K. Thwaites, Esq. [P.].

2. Rana cyanophlyctis.

Rana leschenaultii, *Günth. Cat.* p. 11.
Rana cyanophlyctis, *Schneid. Hist. Amph.* i. p. 137; *Peters, Mon. Berl. Ac.* 1863, p. 78; *Günth. Rept. Brit. Ind.* p. 406; *Steindachn. Novara, Amph.* p. 20; *Stoliczka, Proc. As. Soc.* 1872, p. 102.
—— bengalensis, *Gray, Ind. Zool.*; *Kelaart, Prodr. Faun. Zeyl.* i. p. 192.
—— leschenaultii, *Dum. & Bibr.* p. 342; *Cantor, Cat. Mal. Rept.* p. 138.
Dicroglossus adolfi, *Günth. Proc. Zool. Soc.* 1860, p. 158, pl. 28. f. B, and *Rept. Brit. Ind.* p. 402.

4

Vomerine teeth in two small oblique series extending a little beyond the hinder edge of the choanæ. Head moderate; snout scarcely pointed; canthus rostralis indistinct; interorbital space much narrower than the upper eyelid; tympanum distinct, two thirds the size of the eye. Fingers slender, pointed, first not extending beyond second; toes webbed to the tips, which are pointed, fourth not much longer than third and fifth; subarticular tubercles of fingers and toes small; inner metatarsal tubercle small, conical, much like a rudimentary toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches generally a little beyond the eye. Skin with small tubercles and warts above; besides, more or less distinct rows of pores. Brown or olive above, dark spotted or marbled; two blackish streaks on the hinder side of the thighs, seldom absent; beneath often speckled with blackish. Male with vocal vesicles as in *R. hexadactyla*. Small species.

S.E. Asia.

a–e. ♂ ♀.	Pishiu, Baluchistan.	W. T. Blanford, Esq. [P.].
f. Several spec., ♀ & yg.	Cashmere.	T. C. Jerdon, Esq. [P.].
g–h, *i*, *k*. ♂ ♀.	Himalayas.	Messrs. v. Schlagintweit [C.]. (Types of *Dicroglossus adolfi*.)
l. ♀.	Nilgherries.	F. Day, Esq. [P.].
m–n. Hgr.	Malabar.	Col. Beddome [P.].
o–p, *q–r*. ♀.	Godaveri Valley.	W. T. Blanford, Esq. [P.].
s. ♂.	Ceylon.	Dr. Kelaart [P.].
t–w. ♀.	Ceylon.	Ind. Mus. (*Kelaart*).
x–z, *α–β*, *γ*, *δ*, *ε–ι*, *κ–μ*. Many spec.: ♂, ♀, yg., & larvæ.	Ceylon.	
ν–ξ.	Pinang.	Typical specimens of Cantor's *R. hexadactyla*.

3. Rana ehrenbergii.

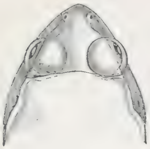
Rana cutipora, *Martens, Nomencl. Mus. Berol.* p. 38.
—— ehrenbergii, *Peters, Mon. Berl. Ac.* 1863, p. 79.

Vomerine teeth in two small oblique series commencing close to the inner edge of the choanæ; lower jaw with two bony prominences in front. Habit stout. Tympanum distinct, half the size of the eye. Fingers pointed; toes very broadly webbed; a single, inner, metatarsal tubercle. Above with small, rather indistinct, flat warts; upper eyelid with cross folds behind; a more or less distinct fold behind the eyes. Male with vocal vesicles as in *R. hexadactyla*.

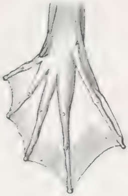
Arabia.

4. Rana crassipes.

Rana crassipes, *Buchh. & Peters, Mon. Berl. Ac.* 1875, p. 201.



Upper surface of head.



Lower surface of foot.

Vomerine teeth in two very small groups close to the inner front edge of the choanæ; two slight bony prominences in front of the lower jaw. Habit stout. Head moderate; snout very short, slightly pointed; canthus rostralis rounded; eyes very prominent; interorbital space half the width of the upper eyelid; tympanum hidden, two thirds the size of the eye. Fingers rather short, pointed, first shorter than second; toes short, fourth not very much longer than third and fifth, slightly dilated at the tips, very broadly webbed; subarticular tubercles of fingers and toes very small; a scarcely prominent, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth; a transverse fold uniting the hinder edges of the upper eyelids; a stronger fold from the eye to the arm. Uniform brown, lighter beneath. Male without vocal sac.

W. Africa.

a. ♂.	River Nodogo, W. Africa.
b. Hgr.	Gaboon.

5. Rana corrugata.

Rana kuhlii, var. B, *Günth. Cat.* p. 8.
Rana corrugata, *Peters, Mon. Berl. Ac.* 1863, p. 412.
—— kuhlii, part., *Günth. Rept. Brit. Ind.* p. 404, pl. 26. f. B.

Closely allied to *R. kuhlii.* Interspace between the choanæ narrower; eyes more oblique, and upper eyelids narrower still; first finger not extending quite as far as second; toes rather shorter. Skin of the back with transverse plaits. Light cross band between the eyes very distinct.

Ceylon; S. China.

a–d. ♀ & yg.	Ceylon.
e. Yg.	S. Ceylon.
f. ♂.	Ningpo.

6. **Rana kuhlii.**

Rana kuhlii, var. A et C, *Günth. Cat.* p. 8.
Rana kuhlii (*Schleg.*), *Dum. & Bibr.* p. 384; *Anders. Anat. Zool. Res. Yunnan*, p. 838.
—— kuhlii, part., *Günth. Rept. Brit. Ind.* p. 404, pl. 26. f. A.
—— conspicillata, *Günth. Proc. Zool. Soc.* 1872, p. 595, pl. 40. f. A; *id. Zool. Record*, ix. p. 97.

Vomerine teeth in two small oblique series behind the choanæ; lower jaw with two more or less developed tooth-like prominences in front. Head moderate; snout short, without canthus rostralis; eyes prominent, turned upwards; upper eyelid rather narrow; interorbital space generally broader than the upper eyelid; tympanum hidden. Fingers moderate, first extending a little beyond second; toes broadly webbed, fourth only one fifth longer than fifth, the tips dilated into small disks; subarticular tubercles of fingers and toes well developed; inner metatarsal tubercle elongate, narrow, blunt; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches usually the eye or scarcely beyond, sometimes the tip of the snout. Above with short longitudinal glandular folds or rounded tubercles, sometimes nearly smooth, except upon the tibiæ. Brown above, with a rather indistinct light cross band between the eyes; sometimes a light vertebral stripe. Male without vocal sac.

Indian Archipelago; S. China.

a. Hgr. & ♀.	Java.	Leyden Museum.
b. Many spec.: ♂, ♀, & yg.	Matang, Borneo.	(Types of *R. conspicillata.*)
c–d. Hgr. & ♀.	Matang, Borneo.	
e. Hgr. & ♀.	Celebes.	Sir A. Smith [P.].
f. ♀.	Ningpo.	

7. **Rana laticeps.** (Plate I. fig. 1.)

Vomerine teeth in two oblique oval groups behind the level of the hinder edge of the choanæ; lower jaw with two bony prominences in front, acute and directed backwards in the adult male. Head large, triangular, especially in the adult male; snout short; subacuminate, with rounded canthus rostralis: interorbital space broader than the upper eyelid; tympanum scarcely distinct, two thirds the size of the eye. Fingers moderate, first not extending beyond second; toes moderate, nearly entirely webbed; tips of toes dilated into very small disks; subarticular tubercles well developed; inner metatarsal tubercle large, elongate, blunt; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Upper parts with small elongated warts and rounded tubercles; a glandular fold above the tympanum. Brown above, indistinctly marbled with darker; a light, dark-edged vitta between the upper eyelids; legs indistinctly cross-barred; throat spotted with brown. Male without vocal sac. From snout to vent 47 millim.

India.

a. Many spec.: ♂, ♀, hgr., & yg.	Khassya.	T. C. Jerdon, Esq. [P.].
b. Hgr.	Bengal.	Col. Beddome [P.]. (As *Polypedates affinis*.)

8. **Rana yunnanensis.**

Rana yunnanensis, *Anders. Anat. Zool. Res. Yunnan*, p. 839, pl. 78. f. 2.

Vomerine teeth but little developed, and in two short oblique ridges on the inner side of the choanæ. Head moderate; snout short, somewhat pointed; tympanum rather indistinct, half the size of the eye. Fingers moderate, first not extending beyond second; toes not entirely webbed, slightly dilated at the tips; inner metatarsal tubercle small, laterally compressed, sharp-edged, crescentic. The hind limb being carried forwards along the body, the metatarsal tubercle reaches a little beyond the snout. Upper surfaces densely covered with round warty tubercles, each surmounted by a small black horny granule; a glandular fold from the eye over the tympanum to the shoulder. Uniform greenish olive-brown, with obscure dark bands from the orbit to the lip and on the upper surface of the limbs; under surface brownish yellow, reticulately spotted with deep brown.

Hotha.

9. **Rana guttulata.** (Plate II.)

Rana guttulata, *Bouleng. Ann. Mag. N. H.* (5) vii. p. 361.

Vomerine teeth in two small groups behind the level of the hinder edge of the choanæ. Head rather large, depressed; snout short, rounded, with rounded canthus rostralis; loreal region concave; interorbital space as broad as or slightly broader than the upper eyelid; tympanum small, hidden. Fingers rather short, first not extending as far as second; toes rather short, broadly webbed; tips of fingers and toes dilated into small disks; subarticular tubercles small; a blunt, oval, inner metatarsal tubercle; no outer one. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches the eye. Skin finely granular above; a fold from the eye to the shoulder; a circular flat gland below each thigh on its inner side. Dark brown above, minutely dotted with yellowish; whitish beneath, immaculate. Male without vocal sacs.

Madagascar.

a–c, d–e. ♂ ♀.	S.E. Betsileo.	Mr. Bartlett [C.]. (Types.)

10. **Rana liebigii.**

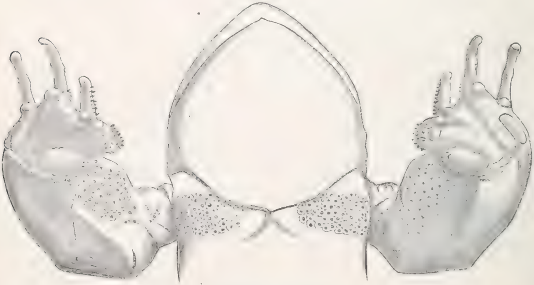
Megalophrys gigas, *Blyth, Journ. As. Soc.* xxiii. p. 299.

Rana liebigii, *Günth. Proc. Zool. Soc.* 1860, p. 157, pl. 28. f. A; *id. Rept. Brit. Ind.* p. 407; *Anders. Proc. Zool. Soc.* 1871, p. 198; *Theobald, Proc. As. Soc.* 1873, p. 111; *Günth. Proc. Zool. Soc.* 1875, p. 567.
—— sikkimensis, *Jerdon, Proc. As. Soc.* 1870, p. 83; *Stoliczka, Proc. As. Soc.* 1872, p. 131.
—— gammii, *Anders. Journ. As. Soc.* 1871, p. 21.
—— ? vicina, *Stoliczka, loc. cit.*
—— gigas, *Peters, Sitzb. Ges. nat. Fr. Berl.* 1881, p. 87.

Vomerine teeth in two small oblique groups extending a little beyond the hinder edge of the choanæ. Head moderate, much depressed; snout very short, rounded; canthus rostralis indistinct; interorbital space nearly as broad as the upper eyelid; tympanum rather small, hidden. Fingers moderate, first not extending beyond second; toes moderate, truncate, entirely webbed; subarticular tubercles of fingers and toes not much developed; inner metatarsal tubercle oval, little prominent; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or beyond. Skin smooth above, seldom warty; a strong fold of the skin above the tympanum, and another, sometimes indistinct, uniting the hinder edges of the upper eyelids; a narrow glandular fold on each side of the back. Brown above; a black line on the canthus rostralis and on the temporal region; lateral folds black-margined; legs indistinctly barred across. Male with two internal vocal sacs.

The breeding male is remarkable by the extreme thickness of its fore arms, the inner sides of which are studded with small conical black spines, each supported on a rounded base produced by a swelling of the skin. A large patch of similar spines exists on each side of the breast; the whole inner side of the inner metacarpal tubercle and of the first and second digits, and the base of the third digit also, bear similar spines, but they are closer together.

Himalayas.



Breeding male.

a. ♂.	Nepal.	B. H. Hodgson, Esq. [P.]. (Type.)
b. ♂.	Sikkim.	Messrs. v. Schlagintweit [C.]. (Type.)
c–d. ♀.	Lialing, Sikkim, 8500 ft.	W. T. Blanford, Esq [P.].
e, f–g.	Darjeeling.	W. T. Blanford, Esq. [P.].

11. **Rana blanfordii.** (PLATE I. fig. 2.)

Vomerine teeth in two small oblique groups on a level with the hinder edge of the choanæ. Head moderate; snout short, rounded, with rounded canthus rostralis; interorbital space as broad as the upper eyelid; tympanum scarcely half the width of the eye, hidden. Fingers moderate, first not extending as far as second; toes moderate, not quite two-thirds webbed; tips of toes swollen into very small disks; subarticular tubercles of fingers and toes not much developed; inner metatarsal tubercle elongate, rather indistinct; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin with indistinct flat warts on the sides of the body; a fold on the temporal region. Olive above, with small black spots; a black streak between the eyes, and another on the canthus rostralis and on the temporal region. Male without vocal sacs. From snout to vent 49 millim.

Arabia?

a–b. ♂ ♀.	Muscat?	W. T. Blanford, Esq. [P.].

12. **Rana subsigillata.**

Rana subsigillata, *A. Dum. Rev. Mag. Zool.* 1856, p. 560; *id. Arch. Mus.* x. p. 224, pl. xviii. f. 1.

Vomerine teeth in two oblique groups between the choanæ; lower jaw with two slight bony prominences in front. Head moderate; snout rather elongate, rounded, without canthus rostralis; interorbital space narrower than the upper eyelid; tympanum not very distinct, two thirds the size of the eye. Fingers moderate, first extending beyond second; toes moderate, two-thirds webbed; subarticular tubercles of fingers and toes well developed; a single, small, oval, inner metatarsal tubercle. Skin nearly smooth; a slight fold from the hinder edge of the eye above the tympanum, extending across the chest. Brown above, indistinctly spotted; rather indistinct dark bars across the limbs. Male without vocal sacs.

W. Africa.

a. ♂.	Old Calabar.

13. **Rana grunniens.**

Rana grunniens, *Günth. Cat.* p. 10.

Rana grunniens, *Daud. Rain.* p. 65, pl. 21; *id. Rept.* viii. p. 127; *Merr. Tent.* p. 174; *Dum. & Bibr.* p. 380.

Rana subsaltans, *Gravenh. Delic. Batr.* p. 35, pl. vii.
—— hydromedusa, (*Kuhl*) *Tschudi, Batr.* p. 80.

Vomerine teeth in two oblique series extending much beyond the level of the hinder edge of the choanæ. Head moderate; snout rounded; tympanum distinct, half the size of the eye; interorbital space as broad as the upper eyelid. Fingers moderate, first extending beyond second; toes broadly webbed, with slightly swollen tips; subarticular tubercles of fingers and toes well developed; an oblong inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth; upper eyelid tubercular; a fold from the posterior angle of the eye to the shoulder. Brown above, with a few reddish spots; hinder side of thighs marbled with dark brown.

Amboyna; Java.

a. Skeleton.	Java.
b. Hgr.	—— ?

14. **Rana macrodon.** (Plate I. fig. 4, inside of mouth.)

Rana macrodon, *Günth. Cat.* p. 8.
Rana macrodon, (*Kuhl*) *Tschudi, Batr.* p. 80; *Dum. & Bibr.* p. 382; *Peters, Mon. Berl. Ac.* 1871, p. 650; *Blanf. Proc. Zool. Soc.* 1881, p. 225, pl. xxi. f. 4.
—— fusca, *Blyth, Journ. As. Soc.* xxxiv. p. 719; *Anders. Proc. Zool. Soc.* 1871, p. 197; *Stoliczka, Journ. As. Soc.* 1873, p. 115; *Anders. Anat. Zool. Res. Yunnan*, p. 837.
Ixalus aurifasciatus, *Peters, Mon. Berl. Ac.* 1863, p. 455.

Vomerine teeth in two strong oblique series commencing from the inner anterior angle of the choanæ; lower jaw with two fang-like bony prominences in front, sometimes scarcely developed. Head large; snout rather pointed; occiput more or less swollen on the sides; interorbital space generally one half broader than the upper eyelid; tympanum distinct, variable in size, generally much smaller than the eye. Fingers moderate, first much longer than the second; toes broadly webbed, with distinctly swollen tips; subarticular tubercles of fingers and toes well developed; inner metatarsal tubercle elongate, blunt; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or a little beyond. Skin smooth above, or with small rounded warts; upper eyelid tubercular; a strong fold above the tympanum. Brown or blackish above; sometimes a light dorsal stripe. Male without vocal sacs.

Young specimens have a very different appearance from that of the adult, having a narrow glandular fold on each side of the back, and the interorbital space not broader than the upper eyelid. Gradually the glandular fold disappears and the interorbital space becomes broader.

E. Indies.

a. ♂.	Zamboanga.	Mr. Everett [C.].
b–c. ♂ ♀.	Dinagat Islands.	Mr. Everett [C.].
d–e, f–g. ♂ & yg.	Laguna del Bay.	Dr. A. B. Meyer [C.].
h–i. ♂ & hgr.	Negros.	Dr. A. B. Meyer [C.].
k. ♂.	Sarawak.	Mr. Everett [C.].
l. ♂.	Java.	Sir A. Smith [P.].
m. ♂.	Java.	Dr. Ploem [C.].
n–o. ♂ ♀.	Singapore.	Dr. Dennys [P.].
p. ♀.	Tenasserim.	W. Theobald, Esq. [P.] (As *Rana fusca.*)
q. ♀ skeleton.	Philippines.	

15. **Rana modesta.** (Plate I. fig. 3.)

Vomerine teeth in two oblique oval groups commencing on a level with the hinder edge of the choanæ; lower jaw with two generally strong bony prominences in front, directed backwards. Head moderate; snout short, rather pointed; interorbital space nearly as broad as the upper eyelid; tympanum distinct, not quite two thirds the size of the eye. Fingers moderate, first extending much beyond second; toes moderate, entirely webbed; cutaneous fringe along the outer side of the fifth toe slightly developed; tips of toes dilated into small disks; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle small, oval; no outer tubercle. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches a little beyond the eye. Skin of the back with rather indistinct short longitudinal glandular folds; upper eyelids tubercular; a more or less distinct fold of the skin between the latter; a strong fold above the tympanum. Brown above, indistinctly spotted; sometimes two lighter vittæ on the back and the canthi rostrales, meeting on the tip of the snout; sometimes a light dorsal stripe; hinder side of thighs dark brown, white-marbled; beneath more or less speckled with brown. Male with two small internal vocal sacs. From snout to vent 7 centim.

This new species is allied to *R. tigrina* and *R. macrodon.* It differs from both by the much smaller size and the arrangement of the vomerine teeth; from the former chiefly by a broader interorbital space and smaller tympanum, longer fingers, slightly developed vocal sacs, &c.; from the latter by a smaller head, generally a narrower interorbital space, and the presence of vocal sacs.

Celebes.

a. Several spec., ♂ ♀.	Gorontalo.	
b. ♂.	Gorontalo.	Dr. A. B. Meyer [C.].
c. ♂.	Manado.	Dr. A. B. Meyer [C.].

The following specimens are referred with some doubt to this species:—

d–g. ♀, hgr. & yg.	——?	W. Theobald, Esq.

16. Rana plicatella.

Rana plicatella, *Stoliczka, Journ. As. Soc.* 1873, p. 116, pl. xi. f. 1.

Vomerine teeth in two short oblique converging series; lower jaw with two fang-like projections directed inwards. Head large; snout obtuse, with the canthi rostrales rounded; interorbital space broader than the upper eyelid; tympanum distinct, as large as the eye. First finger extending beyond second; toes three-quarters webbed, dilated at the tips into small disks; a single, inner, elongated, metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin of the back with about eight longitudinal, somewhat interrupted folds, with numerous small tubercles between them; upper eyelid tubercular. Above greenish brown, with a dark band from the nostril through the eye, continuing behind it; limbs transversely barred; hinder side of the thighs densely and rather minutely variegated with dark brown; a horseshoe-shaped yellow mark, open below, round the vent; beneath white, speckled with dark on the tibiæ and on the feet.

Pinang.

17. Rana tigrina.

Rana tigrina, *Günth. Cat.* p. 9.

Rana tigrina, *Daud. Rain.* p. 64, pl. 20, and *Rept.* viii. p. 125; *Merr. Tent.* p. 174; *Cuv. R. A.*; *Dum. & Bibr.* p. 375; *Kelaart, Prodr. Faun. Zeyl.* p. 192; *Peters, Mon. Berl. Ac.* 1863, p. 77; *Günth. Rept. Brit. Ind.* p. 407; *Steindachn. Novara, Amph.* p. 17; *Günth. Proc. Zool. Soc.* 1875, p. 567; *Anders. Anat. Zool. Res. Yunnan,* p. 837.

—— cancrivora, (*Boie*) *Gravenh. Delic.* p. 41; *Tschudi, Batr.* p. 79.

—— brama, *Lesson, in Bélang. Voy. Ind. Or., Rept.* p. 329, pl. 6.

—— vittigera, *Wiegm. Nova Acta Ac. Leop.* 1835, p. 225, t. 21. f. 1.

—— rugulosa, *Wiegm. l. c.* p. 258, pl. 21. f. 2.

—— crassa, *Jerdon, Journ. As. Soc.* 1853, p. 581; *Theobald, Cat. Rept. As. Soc. Mus.* p. 79; *Anders. Proc. Zool. Soc.* 1871, p. 199.

Hydrostentor pantherinus, *Fitzing. Sitz. Ac. Wien,* xlii. p. 414.

Pyxicephalus fodiens, *Peters, Mon. Berl. Ac.* 1860, p. 186.

Hoplobatrachus ceylanicus, *Peters, Mon. Berl. Ac.* 1863, p. 449; *Günth. Rept. Brit. Ind.* p. 410.

Rana latrans, *David, Nouv. Arch. Mus.* vii. 1872, *Bull.* p. 76.

Vomerine teeth in two oblique series commencing from the inner anterior angle of the choanæ; lower jaw with two not very prominent apophyses in front. Head moderate; snout more or less pointed; interorbital space narrower than the upper eyelid; tympanum distinct, about two thirds the size of the eye. Fingers rather short, first extending beyond second; toes moderate, nearly entirely webbed; a much developed membranaceous fringe along the outer side of the fifth toe; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle very variable, small or large, blunt or shovel-shaped; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or a little beyond. Skin of the back with longitudinal folds ; a strong fold above the tympanum. Brown or olive above, with dark spots ; often a light vertebral line. Male with two subgular vocal sacs, conspicuous externally by folds of the skin on the sides of the throat ; these regions generally blackish.

E. Indies ; S. China.

a, b. ♀.	Shanghai.	R. Swinhoe [C.].
c–d. ♀.	Ningpo.	R. Swinhoe [C.].
e. Yg.	Ningpo.	
f. ♀.	Formosa.	R. Swinhoe [C.].
g. ♀.	Formosa.	M. Dickson, Esq. [P.].
h–i. ♀.	Formosa.	Dr. Collingwood [P.].
k–l. ♂ ♀.	Nepal.	Dr. Scully [C.].
m. ♂.	Sikkim.	Messrs. v. Schlagintweit [C.].
n. Yg.	Nilgherries.	
o. ♀, skin.	Bengal.	
p–q, r. ♀.	Madras.	T. C. Jerdon, Esq. [P.].
s–u. ♀.	Malabar.	Col. Beddome [P.].
v–w, x, y, z–β. ♂ ♀, hgr. & yg.	Ceylon.	
γ. Hgr.	Ceylon.	G. H. K. Thwaites, Esq. [P.].
δ. Yg.	Birmah.	F. Day, Esq. [P.].
ε. ♂.	Pegu.	W. Theobald, Esq. [P.].
ζ. ♂.	Siam.	W. H. Newman, Esq. [P.].
η–ι. ♀.	Pinang.	Dr. Cantor [C.].
κ, λ. ♂ ♀, stuffed.	Pinang.	Major Sykes [P.].
μ. ♀.	Pinang.	Sir A. Smith [P.].
ν–ξ, ο. ♂ ♀.	Java.	
π. ♂.	Java.	Mrs. Lyon [P.]
ρ. ♂.	Borneo.	Leyden Museum.
σ–τ. ♂ ♀.	Borneo.	Mr. Dillwyn [P.].
υ. ♂.	Borneo.	
φ. ♂.	Manado.	Dr. A. B. Meyer [C.].
χ, ψ, aa, bb, cc. Hgr. & yg.	Philippines.	
dd–ee. ♀.	Surigao.	Mr. Everett [C.].
ff–hh, ii–kk. ♀ & yg.	Laguna del Bay.	Dr. A. B. Meyer [C.].
ll. Skeleton.	Laguna del Bay.	
mm. ♂.	—— ?	T. C. Jerdon, Esq. [P.]. (As typical of *Rana crassa*.)

18. Rana occipitalis.

Rana occipitalis, *Günth. Cat.* p. 130, pl. xi.
Rana hydraletis, (*Boie*) *Peters, Mon. Berl. Ac.* 1863, p. 78.
—— bragantina, *Bocage, Rev. Mag. Zool.* 1864, p. 253.
—— occipitalis, *Bocage, Jorn. Sc. Lisb.* 1866, i. p. 73.

Resembles in every respect *Rana tigrina*, but with a fold of the skin uniting the posterior angles of the upper eyelids. Male with vocal vesicles placed as in *R. tigrina*, but more developed.

W. Africa.

a. ♂.	Angola.	Prof. Barboza du Bocage [P.].	
b–d. ♀.	Gambia.	Sir A. Smith [P.].	Types.
e–g, h–i, k. ♂ ♀.	Africa.	Sir A. Smith [P.].	
l. ♀.	W. Africa.	Mr. Fraser [C.].	
m. ♂.	W. Africa.	Prof. Barboza du Bocage [P.].	

19. Rana gracilis.

Rana vittigera, *Günth. Cat.* p. 9.
Rana gracilis, *Wiegm. Nova Acta Ac. Leop.* 1835, p. 257; *Peters, Mon. Berl. Ac.* 1863, p. 78; *Günth. Rept. Brit. Ind.* p. 409; *Steindachn. Novara, Amph.* p. 18; *Stoliczka, Journ. As. Soc.* 1870, p. 142; *Anders. Proc. Zool. Soc.* 1871, p. 200; *Günth. Proc. Zool. Soc.* 1875, p. 567; *Anders. Anat. Zool. Res. Yunnan*, p. 840.
—— nilagirica, *Jerdon, Journ. As. Soc.* 1854, p. 531.
—— agricola, *Jerdon, l.c.*
—— brevipalmata, *Peters, Mon. Berl. Ac.* 1871, p. 646.
—— lymnocharis, (*Boie*) *Stoliczka, Proc. As. Soc.* 1872, p. 102, and *Journ. As. Soc.* 1873, p. 116.

Very closely allied to *R. tigrina*, from which it differs chiefly in its smaller size, half-webbed toes, and the presence of a small outer metatarsal tubercle, which is, however, sometimes indistinct. The relative length of the hind limbs is very variable.

E. Indies; S. China.

a–b, c–d, e–g. ♂ ♀, hgr. & yg.	Shanghai.	R. Swinhoe [C.].
h. Several spec.	Chusan.	East-India Company [P.].
i–k. ♀ & hgr.	Szechuen.	R. Swinhoe [C.].
l. Many spec.: ♀, hgr., & yg.	Ningpo.	
m. ♀.	Loochoo.	A. Collie, Esq. [P.].
n–o. ♂ ♀.	Formosa.	Dr. Collingwood [P.].
p. ♀.	Formosa.	M. Dickson, Esq. [P.].
q–s. ♀ & yg.	Hong Kong.	J. C. Bowring, Esq. [P.].
t. ♀.	Hainan.	R. Swinhoe [C.].
u–x. ♂, ♀, & yg.	China.	J. Reeve, Esq. [P.].
y. Skeleton.	China.	J. Reeve, Esq. [P.].
z. Several spec., ♀ & yg.	Jamu, Himalayas.	Messrs. v. Schlagintweit [C.].
α. Many spec.: ♂, ♀, & yg.	Sikkim.	T. C. Jerdon, Esq. [P.].
β. Several spec., ♀.	Madras.	T. C. Jerdon, Esq. [P.].
γ. Many spec.: ♂, ♀, & yg.	Malabar.	Col. Beddome [P.].
δ. Several spec.: ♂, ♀, & hgr.	Nilgherries.	F. Day, Esq. [P.].
ε. Several spec.: ♂, ♀, & yg.	Nilgherries.	T. C. Jerdon, Esq. [P.]. (As typical of *R. nilagirica*.)
ζ–θ. ♂ ♀.	Ceylon.	Dr. Kelaart [C.].
ι–κ. ♂ ♀.	Ceylon.	— Barnes, Esq. [P.].
λ. Many spec., hgr. & yg.	Ceylon.	W. Ferguson, Esq. [P.].

μ. Many spec.: ♂, ♀, & yg.	Ceylon.	
ν–π, *ρ*. ♀ & yg.	Central Ceylon.	G. H. K. Thwaites, Esq. [P.].
σ. ♀.	Siam.	M. Mouhot [C.].
τ. ♀.	Java.	Dr. Ploem [C.].
υ–ψ. ♂, ♀, & yg.	Java.	Mrs. Lyon [P.].
aa–cc. ♀.	Borneo.	L. L. Dillwyn, Esq. [P.].

20. **Rana verrucosa.** (Plate IV. fig. 1.)

Rana verrucosa, *Günth. Proc. Zool. Soc.* 1875, p. 567.

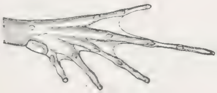
Vomerine teeth in two oblique series between the choanæ. Head moderate; snout rather pointed; interorbital space two thirds the width of the upper eyelid; tympanum distinct, two thirds the size of the eye. Fingers moderate, first extending much beyond second; toes moderate, nearly entirely webbed; subarticular tubercles of fingers and toes very prominent; inner metatarsal tubercle oval, compressed, hardly half as long as the first toe; a small, rounded, outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Upper parts with numerous very prominent warts and short glandular folds. Grey or brown above, darker spotted; hinder side of thighs black, white-marbled; sometimes a broad light vertebral stripe. Male with two internal vocal sacs.

Malabar.

a, *b–d*. Many spec.: ♂, ♀, & yg. Malabar. Col. Beddome [P.]. (Types.)

21. **Rana rufescens.**

Pyxicephalus rufescens, *Jerdon, Journ. As. Soc.* 1854, p. 534; *Günth. Rept. Brit. Ind.* p. 412.



Lower surface of foot.

Vomerine teeth in two oblique groups extending a little beyond the hinder edge of the choanæ. Head short; snout rounded; interorbital space half as broad as the upper eyelid; tympanum distinct, not quite half the size of the eye. Fingers moderate, first extending much beyond second, nearly as long as third; toes rather slender, webbed at the base; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle compressed, shovel-shaped, one third the length of the second toe. The hind limb being carried forwards along the body, the metatarsal tubercle reaches a little beyond the tip of the snout. Skin of the upper parts with large, rounded, very prominent warts. Greyish brown above, indistinctly marbled; legs transversely barred; throat brown-spotted, with a M-shaped blackish patch in the male. The latter with two much developed internal subgular vocal sacs.

Malabar.

a–e, f–g. ♂, ♀, & yg.	Malabar.	Col. Beddome [P.].

22. **Rana tuberculosa.**

Pyxicephalus rugosus, *Günth. Proc. Zool. Soc.* 1864, p. 479, pl. 33. f. 1.

Vomerine teeth in two oblique groups between the choanæ. Head short; snout rounded; interorbital space narrower than the upper eyelid; tympanum distinct, two thirds the size of the eye. Fingers moderate, first extending slightly beyond second; toes moderate, one-third webbed; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle compressed, shovel-like, half as long as the second toe; no other metatarsal tubercle. The hind limb being carried forwards along the body, the metatarsal tubercle reaches beyond the tip of the snout. Skin of upper surfaces with prominent glandular folds and tubercles. Brown above, darker marbled; a light vertical spot on the loreal region, between eye and nostril; sometimes a light vertebral stripe.

W. Africa.

a–b. ♀.	Pungo Andongo.	Mr. Welwitsch [C.]. (Types.)
c. ♀.	W. Africa.	Prof. Barboza du Bocage [P.].

23. **Rana natalensis.**

Tomopterna natalensis, *Günth. Cat.* p. 129.
Pyxicephalus natalensis, *Smith, Ill. S. Afr., Rept., App.* p. 23; *Günth. Proc. Zool. Soc.* 1870, p. 401.
Tomopterna labrosa, *Cope, Proc. Ac. Philad.* 1868, p. 111.
Pyxicephalus madagascariensis, *Grandid. Ann. Sc. Nat.* ser. 5, t. xv. 1872, a. 20, p. 9.

Vomerine teeth in two scarcely oblique groups between the choanæ. Head moderate; snout moderate; interorbital space narrower than the upper eyelid; tympanum very distinct, two thirds the size of the eye. Fingers moderate, first extending a little beyond second; toes moderate, half webbed; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle compressed, shovel-shaped, half the length of the second toe; no other metatarsal tubercle. The hind limb being carried forwards along the body, the metatarsal tubercle reaches nearly the tip of the snout. Skin smooth. Greyish brown above, dark-marbled; sides of head dark, with a vertical light spot between eye and nostril; legs cross-barred.

S. Africa; Madagascar.

a. ♀.	Natal.	Sir A. Smith [P.].
b. ♀.	Madagascar.	

24. Rana cordofana.

Pyxicephalus cordofanus, *Steindachn. Novara, Amph.* p. 8.

Tongue less emarginate. Lower jaw with tooth-like prominences in front. Head moderate; snout rather long; tympanum rather indistinct. Toes incompletely webbed, fourth nearly twice as long as third; inner metatarsal tubercle shovel-like, very large; a small tubercle opposite to it. Grey above, brown-marbled.

Cordofan.

25. Rana delalandii.

Tomopterna delalandii, *Günth. Cat.* p. 7.
Tomopterna marmorata, *Günth. l. c.*
Pyxicephalus delalandii, *(Bibr.) Tschudi, Batr.* p. 84; *Dum. & Bibr.* p. 445, pl. 87. fig. 1; *Smith, Ill. S. Afr., Rept., App.* p. 23; *Steindachn. Novara, Amph.* p. 8.
—— marmoratus, *Peters, Arch. f. Naturg.* 1855, p. 56.

Vomerine teeth in two oblique groups extending a little beyond the hinder edge of the choanæ. Habit stout. Head short; snout rounded; interorbital space narrower than the upper eyelid; tympanum distinct, half the size of the eye. Fingers moderate, first extending a little beyond second; toes moderate, half webbed; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle shovel-like, two thirds the length of the second toe; an indistinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the metatarsal tubercle reaches a little beyond the eye. Skin of the upper surfaces with smooth rounded warts. Olive or brown above, often with one or three light dorsal lines; throat of the males brown. Male with an internal subgular vocal sac.

S. and E. Africa.

a. ♂.	S. Africa.	Sir A. Smith [P.].
b. Young.	S. Africa.	
c–h. ♂, ♀, & yg.	Cape of Good Hope.	Sir A. Smith [P.].
i. Young.	Near Antolo.	W. T. Blanford, Esq. [P.].

26. Rana breviceps.

Sphærotheca strigata, *Günth. Cat.* p. 20, pl. ii. f. A.
Tomopterna delalandii, *Günth. l. c.* p. 129.
Rana breviceps, *Schneid. Hist. Amph.* i. p. 142; *Peters, Mon. Berl. Ac.* 1863, p. 76.
Pyxicephalus fodiens, *Jerdon, Journ. As. Soc.* 1854, p. 534.
—— pluvialis, *Jerdon, l. c.*
Tomopterna strigata, *Günth. Proc. Zool. Soc.* 1860, p. 165.
Pyxicephalus breviceps, *Günth. Rept. Brit. Ind.* p. 411; *Theobald, Cat. Rept. As. Soc. Mus.* p. 80; *Anders. Proc. Zool. Soc.* 1871, p. 200.

Vomerine teeth in two oblique groups, extending a little beyond the hinder edge of the choanæ. Habit stout. Head short; snout rounded; occiput swollen; interorbital space narrower than the upper eyelid; tympanum distinct, half the size of the eye. Fingers moderate, first extending much beyond second, nearly as long as third; toes moderate, half webbed; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle shovel-shaped, nearly as long as second toe; no other metatarsal tubercle. The hind limb being carried forwards along the body, the metatarsal tubercle reaches the eye, or somewhat beyond. Skin of upper parts smooth, with some scattered tubercles. Light brown or olive above, darker marbled; often a light vertebral stripe, and sometimes another on the upperside of each flank; throat of the males blackish, that of the females generally brown-spotted. Male with two much-developed internal subgular vocal sacs.

India.

a Female.	Himalayas.	Messrs. v. Schlagintweit [C.].	
b. Several spec.: ♂, ♀, & yg.	Madras.	T. C. Jerdon, Esq. [P.].	Types of *Sphærotheca strigata*.
c. ♂ (skeleton).	Madras.	T. C. Jerdon, Esq. [P.].	
d–g. Young.	Malabar.	T. C. Jerdon, Esq. [P.].	
h–i. Female.	Malabar.	Col. Beddome [P.].	
k. Several spec., ♂ ♀.	Ceylon.		

27. Rana dobsonii. (Plate III. fig. 1.)

Vomerine teeth in two oblique series between the choanæ. Habit stout. Head large; interorbital space narrower than the upper eyelid; tympanum very distinct, two thirds the size of the eye. Fingers moderate, first much longer than second, as long as third; toes webbed at the base, moderate; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle shovel-like, two thirds the length of second toe; no outer metatarsal tubercle. The hind limb being carried forwards along the body, the metatarsal tubercle reaches a little beyond the eye. Skin smooth above, granulate on the belly. Grey above, indistinctly marbled with brown; a deep black vitta along the canthus rostralis through the eye to the shoulder, expanding in a round spot on the tympanum; thighs black above, white-marbled; beneath yellowish, indistinctly brown-spotted on the throat. From snout to vent 54 millim.

W. India.

a. ♀. Mangalore, W. coast of India. G. E. Dobson, Esq. [P.].

28. Rana ornata.

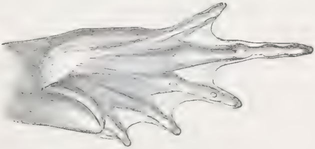
Pyxicephalus ornatus, *Peters, Mon. Berl. Ac.* 1878, pl. 2. f. 7.

Vomerine teeth in two small groups between the choanæ. Habit stout. Head moderate; tympanum not much smaller than the eye, very distinct. Fingers very short, first a little shorter than second; toes very short, half webbed; metatarsal shovel obtuse. Hind limb not much longer than head and body. Upper parts smooth. Olive-green above, with three broad olive-brown bands along the back; limbs transversely barred.

Taita, E. Africa.

29. Rana adspersa.

Tomopterna adspersa, *Günth. Cat.* p. 7.
Pyxicephalus adspersus, (*Bibr.*) *Tschudi, Batr.* p. 84; *Dum. & Bibr.* p. 444; *Smith, Ill. S. Afr., Rept.* pl. 49; *Steindachn. Novara, Amph.* p. 7.
—— edulis, *Peters, Arch. f. Naturg.* 1855, p. 56.



Lower surface of foot.

Vomerine teeth in two scarcely oblique groups between the choanæ; lower jaw with two large bony prominences in front. Habit very stout. Head large, generally bony, rough on the sides and above; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds or three fourths the size of the eye. Fingers short, first not extending beyond second; toes short, half webbed; inner metatarsal tubercle shovel-like, as long as the second toe; no other metatarsal tubercle; subarticular tubercles moderate. The hind limb being carried forwards along the body, the metatarsal tubercle reaches the eye. Skin warty above, with longitudinal glandular folds on the back. Olive or brown above, sometimes with a light vertebral line; throat more or less spotted with brown. Male with a subgular vocal sac.

South and East Africa.

a, b. ♂ & yg.	Cape of Good Hope.	Sir A. Smith [P.].
c. Ad. (stuffed).	S. Africa.	Sir A. Smith [P.].
d. ♀.	Mossambique.	Prof. Peters. (As typical of *Pyxicephalus edulis.*)
e. Ad. (stuffed).	Africa.	

30. Rana maltzanii.

Maltzania bufonia, *Boettg. Abhandl. Senck. Ges.* xii. p. 418, pl. i. f. 3.

Closely allied to *R. adspersa*, from which it differs in the larger tympanum and the absence of longitudinal folds on the back.

In this, as in the preceding species, the tongue is less deeply emarginate than in the other members of the genus *Rana*.

Senegambia.

31. Rana khasiana.

Pyxicephalus khasianus, *Anders. Journ. As. Soc.* 1871, p. 23.

Vomerine prominences placed transversely behind the choanæ; lower jaw with two apophyses in front. Head moderate; occiput much swollen; tympanum half the size of the eye, faintly visible. First and second fingers nearly equal. Legs of moderate length. A small, little prominent metatarsal shovel. Uniform brown above, faintly barred on the thighs; spotted with brown on the sides, chin, thorax, and under surface of the limbs.

Khasi Hills.

32. Rana capito.

Rana capito, *Leconte, Proc. Ac. Philad.* 1855, p. 425, pl. 5.

Vomerine teeth in two straight groups between the choanæ. Habit stout. Head large; snout moderate, subtriangular, with indistinct canthus rostralis; interorbital space narrower than the upper eyelid; tympanum very distinct, two thirds the size of the eye. Fingers moderate, first extending beyond second; toes rather short, hardly half webbed; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle small, oval, slightly compressed; a rather indistinct outer tubercle. The hind limb being carried forwards along the body, the metatarsal tubercle reaches between the eye and the tip of the snout. A rather broad, but not very prominent, glandular lateral fold. Brownish above, with small rounded dark spots close together; legs cross-barred.

Georgia.

a–b. Hgr.	N. America.	Edward Doubleday, Esq. [P.].

33. Rana rugosa.

Rana rugosa, *Günth. Cat.* p. 11.

Rana rugosa, *Schleg. Faun. Japon., Rept.* pl. 3. f. 3, 4; *Tschudi, Batr.* p. 79; *Dum. & Bibr.* p. 368; *Hallow. Proc. Ac. Philad.* 1860, p. 499; *Martens, Preuss. Exp. O.-As.* i. p. 111; *Camerano, Atti Ac. Torino,* xiv. p. 868.

Vomerine teeth in two oblique groups between the choanæ. Head moderate; snout short, rounded; interorbital space as broad as the upper eyelid; tympanum distinct, two thirds the size of the eye. Fingers moderate, first not extending beyond second; toes moderate, incompletely webbed; subarticular tubercles of fingers and toes rather small; inner metatarsal tubercle small, oval, blunt; a small rounded one opposite to it. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Above rough with very large, elongated tubercles; beneath, granular. Brown; legs indistinctly cross-barred. (Male with external vocal vesicles.)

Japan.

a, b. ♀.	Japan.	Leyden Museum.
c. ♀.	——?	Dr. Bleeker.

34. Rana montezumæ.

Rana montezumæ, *Baird, Proc. Ac. Philad.* 1855, p. 61; *Girard, U.S. Mex. Bound. Surv., Rept.* p. 27, pl. 36. f. 1–6; *Brocchi, Miss. Sc. Mex., Batr.* p. 14, pl. iv. f. 2.

—— onca, *Cope, in Yarrow, Rep. Expl. Surv.* v. *Zool.* p. 528, pl. 25. f. 1–3.

Vomerine teeth in two nearly straight groups between the choanæ. Habit stout. Head short, snout rounded; canthus rostralis indistinct; interorbital space two thirds the width of the upper eyelid; tympanum nearly as large as the eye. Fingers pointed, first not extending beyond second; toes broadly webbed; subarticular tubercles of fingers and toes small; a small, blunt, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the tympanum. A narrow glandular lateral fold, sometimes quite indistinct, especially on the hinder half of the back; sides of body with small, pearl-like tubercles. Brown above, more or less distinctly speckled with grey; small, rounded, dark-brown spots on the back, transverse ones on the limbs; beneath yellowish or light brown, dotted with whitish. Male with a black external vocal vesicle on each side, behind the angle of the mouth.

Mexico.

a. ♀.	City of Mexico.	Mr. Doorman [C.].
b, c, d. ♂ ♀.	Tehuantepec.	
e–i. ♀.	Mexico.	

35. Rana catesbiana.

Rana mugiens, *Günth. Cat.* p. 15.
Rana catesbiana, *Shaw, Zool.* iii. p. 105; *Leconte, Proc. Ac. Philad.* 1855, p. 423.
—— mugiens, *Merr. Tent.* p. 175; *Wagl. Syst.* p. 203; *Tschudi, Batr.* p. 79; *Dum. & Bibr.* p. 370.
—— pipiens, *Harlan, Sillim. Journ.* x. p. 62, *and Journ. Ac. Philad.* v. p. 335; *Cuv. R. A.*; *Holbr. N.-Amer. Herp.* iv. p. 77, pl. 18; *Dekay, N.Y. Faun.* p. 60, pl. 19. f. 48.
—— scapularis, *Harlan, l. c.*
—— conspersa, *Leconte, Proc. Ac. Philad.* 1855, p. 425.

Vomerine teeth in two small groups close together, between the choanæ. Head moderate; snout rounded; canthus rostralis indistinct; interorbital space either as broad as the upper eyelid or much narrower; tympanum at least as large as the eye, generally much larger, especially in males. Fingers rather pointed, first not extending beyond second; toes broadly webbed; subarticular tubercles of fingers and toes little developed; a small inner, but no outer, metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation does not reach beyond the eye. No glandular lateral fold. Brown or olive above, darker marbled; beneath immaculate, or marbled with brown. Male with two internal vocal sacs.

E. N. America.

a, b. Ad. (stuffed).	Delaware.	Edward Doubleday, Esq. [P.].
c, d–e. ♂ ♀.	N. America.	Lord Ampthill [P.].
f, g, h. ♂ ♀.	N. America.	
i–k, l.	N. America.	College of Surgeons [P.].
m. Skin.	N. America.	
n. Skeleton.	N. America.	
o. ♀.	Mexico.	

36. Rana clamata.

Rana clamata, *Günth. Cat.* p. 14.
Rana horiconensis, *Günth. l. c.* p. 131.
Rana clamata, *Daud. Rain.* p. 54, pl. 52. f. 2, *and Rept.* viii. p. 204; *Harlan, Sillim. Journ.* x. p. 63, *and Journ. Ac. Philad.* v. p. 338; *Dum. & Bibr.* p. 373; *Peters, Mon. Berl. Ac.* 1863, p. 412.
—— clamitans, *Merr. Tent.* p. 175; *Holbr. N.-Amer. Herp.* iv. p. 85, pl. 20.
—— fontinalis, *Leconte, Ann. Lyc. N. Y.* i. p. 282, *and Proc. Ac. Philad.* 1835, p. 424; *Holbr. l. c.* p. 87, pl. 21; *Dekay, N. Y. Faun., Rept.* p. 61, pl. 21. f. 64 *a*.
—— flavoviridis, *Harl. l. c., and Med. Phys. Res.* p. 103.
—— horiconensis, *Holbr. l. c.* p. 83, pl. 19; *Dekay, l. c.* p. 61, pl. 22. f. 62.
—— nigrescens, *Agassiz, Lake Superior,* p. 879; *Leconte, Proc. Ac. Philad.* 1855, p. 20.
—— clamator, *Leconte, l. c.* p. 20.

Vomerine teeth in two small oblique groups close together, extending a little beyond the hinder edge of the choanæ. Head moderate; snout rounded, with distinct canthus rostralis; interorbital space half the width of the upper eyelid or rather more; tympanum at least as large as the eye, sometimes nearly twice as large, generally larger in males than in females. Fingers with blunt tips, first not extending beyond the second; toes not webbed to the tips; subarticular tubercles of fingers and toes moderate; a single, small metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. A prominent, narrow, glandular lateral fold, at least on the front half of the back. Brown or olive above, more or less spotted or marbled with blackish; beneath, immaculate or marbled with grey. Male with two internal vocal sacs.

E. N. America.

a. ♀.	Canada.	Sir A. Smith [P.].
b. ♂.	New York.	
c. ♂.	Philadelphia.	
d. ♀.	Georgia.	
e–f, *g*. ♂ ♀.	N. America.	

37. Rana septentrionalis.

Rana septentrionalis, *Baird, Proc. Ac. Philad.* 1855, p. 51.
—— sinuata, *Baird, l. c.*

Vomerine teeth small, between the choanæ. Habit stout. Tympanum three fourths the size of the eye. Toes not quite entirely webbed. Skin porous; a broad, depressed, glandular lateral fold; a branch of same round the tympanum; beneath with scattered glandules. Above olive or brown, with lighter vermiculations, and with a few large dark blotches posteriorly; beneath immaculate.

Canada to Montana.

38. Rana plancyi.

? Rana trivittata, *Hallow. Proc. Ac. Philad.* 1860, p. 505.
Rana plancyi, *Lataste, Le Naturaliste*, 1880, p. 210, *and Bull. Soc. Zool. Fr.* 1880, p. 64.

Vomerine teeth in two slightly oblique groups extending a little beyond the hinder edge of the choanæ. Snout a little shorter than in *R. esculenta*; tympanum as large as the eye, close to it. Fingers more slender, pointed; subarticular tubercles of fingers and toes little developed; inner metatarsal tubercle strong, compressed, rather more than half the length of the first toe. Glandular lateral fold very much developed, as broad as the upper eyelid. Greyish or olive above, uniform or with indistinct dark spots; seldom a light vertebral line; a blackish band along the hinder side of the thighs; a similar one, sometimes indistinct, along each side of the belly. Male with two internal vocal sacs. Otherwise like *R. esculenta.*

China.

a. Many spec., ♂ ♀.	Shanghai.	R. Swinhoe [C.].
b, c–d. ♀ & yg.	Chusan.	
e–f. Yg.	Chusan.	East-India Company [P.].
g–i. ♀.	Ningpo.	
k–l. ♂ ♀.	Formosa.	
m. ♀.	Formosa.	M. Dickson, Esq. [P.].

39. **Rana esculenta.**

Rana esculenta, *Günth. Cat.* p. 12.

Rana viridis, *Rösel, Hist. Ran.* p. 53, pls. 13–16; *Linn. Faun. Suec.* p. 94; *Shaw, Zool.* iii. p. 103, pl. 31; *Dum. & Bibr.* p. 343; *Lataste, Herp. Gir.* p. 224.

—— esculenta, *Linn. S. N.* i. p. 357; *Laur. Syn. Rept.* p. 31; *Müll. Zool. Dan. Prodr.* p. 35; *Meyer, Syn. Rept.* p. 12; *Sturm, Deutschl. Faun.* iii. Heft 1; *Donnd. Zool. Beitr.* iii. p. 55; *Daud. Rain.* p. 46, pl. 15. f. 1, *and Rept.* viii. p. 90; *Cuv. R. A.*; *Merr. Tent.* p. 176; *Eichw. Zool. Spec.* iii. p. 166; *Wagl. Syst. Amph.* p. 203; *Bonap. Faun. Ital.*; *Holandre, Faun. Moselle,* p. 220; *Schinz, Faun. Helv.* p. 143; *Tschudi, Batr.* p. 79; *Bell, Brit. Rept.* p. 110; *Massalongo, Erp. Veron.* p. 47; *Steindachn. Novara, Amph.* p. 16; *Koch, Ber. Senck. Ges.* 1872, p. 135; *Fatio, Vert. Suisse,* iii. p. 312; *De Betta, Faun. Ital., Rett. Anf.* p. 63; *Boettger, Abh. Senck. Ges.* 1874, p. 165; *Schreiber, Herp. Eur.* p. 177; *Leydig, An. Batr.* p. 104; *Lessona, Atti Ac. Lincei, Mem. Cl. Sc.-fis.* i. p. 1050, pl. 1.

—— ridibunda, *Pallas, Iter.*

—— maritima, *Risso, Hist. Nat. Eur. mér.* iii. p. 92; *Bonap. l. c.*; *Girard, U. S. Expl. Exped., Herp.* p. 25, pl. 2. f. 7–12.

—— hispanica, *Michah. Isis,* 1830, p. 160; *Bonap. l. c.*

—— calcarata, *Michah. l. c.*; *Tschudi, l. c.* p. 80, pl. 1. f. 1.

—— cachinans, *Pallas, Zoogr. Ross.-As.* iii. p. 7, pl. 1; *Eichw. Zool. Casp. Cauc.* p. 136, pl. 30.

—— caucasica, *Pall. l. c.*

—— dentex, *Krynicki, Bull. Mosc.* iii. p. 63, pl. ii.

—— tigrina, *Eichw. l. c.*

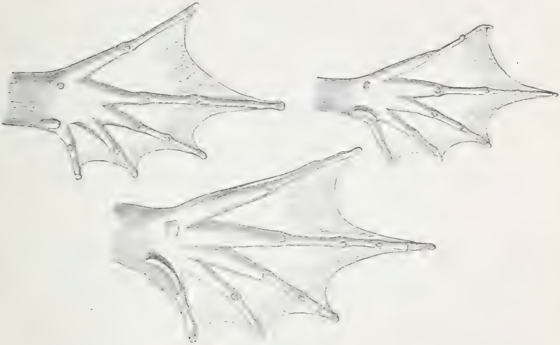
Pelophylax esculentus, *Fitzing. Syst. Rept.* i. p. 31.

—— hispanicus, *Fitzing. Sitz. Ac. Wien,* xlii. p. 414.

Vomerine teeth in two slightly oblique groups between the choanæ. Head moderate; snout rounded or subacuminate; interorbital space much narrower than the upper eyelid; tympanum distinct, about two thirds the size of the eye. Fingers moderate, first extending a little beyond second; toes entirely webbed; subarticular tubercles of fingers and toes well developed; inner metatarsal tubercle very variable, either blunt or compressed, shovel-shaped, much shorter than, or nearly as long as, the first toe; a small outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. A very prominent glandular lateral fold. Upper parts more or less spotted or marbled with dark brown or black; generally three light stripes along the back; hinder side of thighs black-marbled. Male with an external vocal vesicle on each side, opening by a slit behind the angle of the mouth.

Europe; W. Asia; N.W. Africa.

Lower surface of foot.



N. Africa. E. Asia. C. Europe.

a–b. ♀.	Tunis.	Mr. Fraser [C.].
c. Yg.	Susa, N. Africa.	Mr. Fraser [C.].
d. Many spec.: ♂, ♀, & yg.	Constantine.	P. L. Sclater, Esq. [P.].
e–h. ♂, ♀, & yg.	Azores.	F. D. Godman, Esq. [P.].
i, k–l. ♂ ♀.	S. Europe.	R. B. Webb, Esq. [P.].
m. Skin.	Italy.	
n–o, p–r, s–t. ♂, ♀, & larvæ.	Bononia.	J. J. Bianconi [P.].
u–v. Yg.	Turin.	Prof. Bonelli [P.].
w. ♀.	Hungary.	
x. Yg.	Hanover.	Dr. J. E. Gray [P.].
y–z. ♀ & yg.	N. Germany.	
α. Skeleton.	Paris.	
β–δ, ε–η. ♂, ♀, hgr., & yg.	Cambridgeshire.	W. Yarrell, Esq. [P.].
θ. ♀.	Europe.	Lord A. Russell [P.].
ι. ♀.	Europe.	
κ. ♀ (stuffed).	Europe.	
λ. Skin.	Europe.	
μ. Skeleton.	Europe.	
ν. Yg.	Albistan.	C. G. Danford, Esq. [P.].
ξ, ο. ♂ ♀.	Dead Sea.	Rev. H. B. Tristram [C.].
π. ♀.	Merom.	Rev. H. B. Tristram [C.].
ρ–σ. ♂.	Plains of Phœnicia.	Rev. H. B. Tristram [C.].
τ. ♀.	Lake of Galilee.	Rev. H. B. Tristram [C.].
υ. ♂.	Jericho.	Dr. Anderson [P.].

φ. ♀.	Damascus.	Dr. Anderson [P.].
χ. Yg.	Guezama.	W. C. Trevelyan, Esq. [P.].
ψ. ♀.		Euphrates Expedition.
ω. Hgr.	Bussorah.	W. T. Blanford, Esq. [C.].
aa. ♀.	Shiraz.	W. T. Blanford, Esq. [C.].

Var. japonica.

Rana esculenta, *Schleg. Faun. Japon., Rept.* p. 109, pl. 3. f. 1; *Günth. Rept. Brit. Ind.* p. 408; *Martens, Preuss. Exped. O.-As.* i. p. 111.
—— marmorata, *Hallow. Proc. Ac. Philad.* 1860, p. 500; *Camerano, Atti Ac. Tor.* xiv. p. 871.
—— nigromaculata, *Hallow. l. c.*
? Hoplobatrachus reinhardti, *Peters, Mon. Berl. Ac.* 1867, p. 711.
Rana esculenta marmorata, *Lataste, Le Naturaliste,* 1880, p. 210, *and Bull. Soc. Zool. Fr.* 1880, p. 61.

Inner metatarsal tubercle very large, shovel-shaped; interrupted narrow glandular folds along the back.

Japan, China.

αα–γγ, δδ–εε. ♂ ♀.	Japan.	Leyden Museum.
ζζ. Several spec.: ♂, ♀, & yg.	Chefoo.	R. Swinhoe [C.].
ηη, θθ–λλ. Many spec.: ♂, ♀, & yg.	Shanghai.	R. Swinhoe [C.].
μμ. ♀.	Chusan.	
νν–οο, ππ. ♂, ♀, & yg.	Ningpo.	

40. Rana porosa.

Tomopterna porosa, *Cope, Proc. Ac. Philad.* 1868, p. 111.

Vomerine teeth in two groups between the choanæ. Head moderate; tympanum nearly as large as the eye. First finger longer than second; toes nearly completely webbed; inner metatarsal tubercle shovel-like. The hind limb being carried forwards along the body, the metatarsal tubercle reaches beyond the tip of the snout. A glandular dermal fold from above the tympanum to above groin on the side; the greatest part of the upper eyelid glandular and covered with pores. Brown above, with dark grey shades; sometimes an imperfect pale vertebral line; sides handsomely marbled with white below and grey above.

Kanagawa, Japan.

41. Rana utricularia.

Rana utricularia, *Harlan, Sillim. Journ.* x. p. 59, *and Journ. Ac. Philad.* v. p. 337.
—— halecina, *Hallow. Proc. Ac. Philad.* 1856, p. 141.
—— berlandieri, *Baird, U. S. Mex. Bound. Surv., Rept.* p. 27, pl. 36. f. 7–10.

This Frog is certainly distinct from *R. halecina,* though very closely allied to it, as, according to the authors quoted above, the male is provided with an external vocal vesicle behind each angle of the mouth. Upper part of each flank with a well-marked row of pores, which does not exist in *R. halecina*.

United States.

42. Rana areolata.

Rana areolata, *Baird & Gir. Proc. Ac. Philad.* 1852, p. 173; *Baird, U. S. Mex. Bound. Surv.* pl. 36. f. 11, 12.

Appears to be closely allied to *R. halecina* and *utricularia*, but the head is larger and the spots of the back are smaller and more numerous. Male with an external vocal vesicle on each side behind the angle of the mouth.

South of North America.

43. Rana halecina.

Rana halecina, *Günth. Cat.* p. 13.

Rana halecina, *Kalm, Iter Amer.* iii. p. 46; *Daud. Rain.* p. 63, *and Rept.* viii. p. 122; *Merr. Tent.* p. 175; *Holbr. N.-Amer. Herp.* i. p. 89, pl. 13; *Tschudi, Batr.* p. 79; *Dum. & Bibr.* p. 352; *Dekay, N. Y. Faun., Rept.* p. 62, pl. 22. f. 60; *Cooper, U. S. Expl. Surv.* xii. part ii. pl. xxix. f. 1; *Brocchi, Miss. Sc. Mex., Batr.* p. 10.
—— virginiana, *Laur. Syn. Rept.* p. 31.
—— pipiens, *Gmel. S. N.* iii. p. 1052; *Donnd. Zool. Beitr.* iii. p. 51; *Schreb. Naturf.* xviii. p. 182, pl. 4; *Shaw, Zool.* iii. p. 133; *Schneid. Hist. Amph.* p. 105, pl. 32; *Leconte, Proc. Ac. Philad.* 1855, p. 423.
—— palustris, *Guérin, Iconogr. Rept.* pl. 26. f. 1.
—— oxyrhynchus, *Hallow. Proc. Ac. Philad.* 1856, p. 142.

Vomerine teeth in two scarcely oblique groups between the choanæ. Head moderate; snout rather pointed; interorbital space half as broad as the upper eyelid; tympanum distinct, nearly as large as the eye. Fingers moderate, first extending beyond second; toes not quite webbed to the end; subarticular tubercles of fingers and toes well developed; inner metatarsal tubercle very small, blunt; no outer one. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. A prominent, narrow, glandular lateral fold. Olive or greyish brown above, with regular oval or rounded dark-brown, light-edged spots; legs cross-barred; beneath immaculate. Male with two little-developed internal vocal sacs.

North and Central America.

a–b. Yg.	Lake Winnipeg.	Sir J. Richardson [P.].
c. ♀.	Canada.	Sir A. Smith [P.].
d–e. ♀.	United States.	Smithsonian Institution.
f. ♀.	N. America.	Lord Ampthill.
g. ♀, skeleton.	N. America.	Edward Doubleday, Esq. [P.].
h. ♂.	Mexico.	
i–k. ♀.	Coban.	

l. ♀.	Dueñas.	O. Salvin, Esq. [C.].
m–o. ♂ ♀.	Lanquin, Guatemala.	O. Salvin, Esq. [C.].

44. Rana palustris.

Rana palustris, *Günth. Cat.* p. 14.

Rana palustris, *Leconte, Ann. Lyc. N. Y.* i. p. 282; *Harlan, Sillim. Journ.* x. p. 59, *and Journ. Ac. Philad.* v. p. 339; *Dum. & Bibr.* p. 356; *Holbr. N.-Amer. Herp.* iv. p. 95, pl. 23; *Dekay, N. Y. Faun., Rept.* p. 62, pl. 62. f. 6; *Leconte, Proc. Ac. Philad.* 1855, p. 424; *Wied, Nova Acta Ac. Leop.* xxxii. p. 114.
—— pardalis, *Harlan, Amer. Journ.* x. p. 50.

Closely allied to *R. halecina*. Glandular lateral folds much broader and less prominent; two similar folds between them. Spots of the back subquadrangular; legs regularly barred. Male with two internal vocal sacs.

United States.

a. ♀.	Philadelphia.	
b–c. ♂.	N. America.	Sir A. Smith [P.].
d–e, f, g, h–k, l. ♂ ♀.	N. America.	

45. Rana macroglossa.

Rana macroglossa, *Brocchi, Bull. Soc. Philom.* (7) i. p. 177, *and Miss. Sc. Mex., Batr.* p. 12, pl. iii. f. 1.

Very closely allied to, if different from, *R. halecina*. Tympanum smaller, about half the size of the eye.

Guatemala.

46. Rana maculata.

Rana maculata, *Brocchi, Bull. Soc. Philom.* (7) i. p. 178, *and Miss. Sc. Mex., Batr.* p. 13, pl. iii. f. 2.

Differs from *R. halecina* chiefly in the first finger not being longer than second, the slight development of the subarticular tubercles of the toes, and the shorter head.

Totonicapam, Mexico.

47. Rana lecontii.

Rana lecontei, *Günth. Cat.* p. 15.

Rana lecontei, *Baird & Gir. Proc. Ac. Philad.* 1853, p. 301; *Brocchi, Bull. Soc. Philom.* (7) i. p. 179, *and Miss. Sc. Mex., Batr.* p. 14, pl. iv. f. 1.

Vomerine teeth in two oblique groups between the choanæ. Head much longer than broad; snout rather pointed; interorbital space narrower than the upper eyelid; tympanum somewhat more than half the size of the eye. Fingers moderate, first extending scarcely beyond second; toes not entirely webbed; subarticular tubercles of fingers and toes well developed; a single, small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or a little beyond. A narrow glandular lateral fold. Brown above, with round dark spots; a dark temporal spot.

California; Mexico.

a–b, c. Hgr.	Mexico.	M. Sallé [C.].
d–e. Hgr.	Vera Cruz.	

48. Rana nigricans.

Rana nigricans, *Hallow. Proc. Ac. Philad.* 1854, p. 96; *Bouleng. Bull. Soc. Zool. Fr.* 1880, p. 207; *Brocchi, Miss. Sc. Mex., Batr.* p. 15, pl. iv. f. 3.

? Rana boylii, *Baird, Proc. Ac. Philad.* 1855, p. 62.

Rana longipes, *Hallow. U. S. Expl. Surv.* x. 1859, iv. *Zool.* p. 20, pl. x. f. 1.

Vomerine teeth in two nearly straight oval groups between the choanæ. Head moderate; snout short, rounded; interorbital space at least as broad as the upper eyelid; tympanum distinct, two thirds the size of the eye. Fingers moderate, first extending beyond second; toes moderate, not entirely webbed; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle small, blunt; outer tubercle none, or obtuse. The hind limb being stretched forwards along the body, the tibio-tarsal articulation reaches the eye, or a little beyond. Glandular lateral folds not prominent (in the adult), much further apart than in *Rana fusca.* Dark brown above, with small darker spots; legs barred across; beneath either whitish, scarcely or not spotted, or greyish brown, vermiculated with whitish; hinder side of thighs blackish, white-marbled. Large species.

W. N. America.

a–b. ♀.	Pacific Coast of N. America.
c. Yg.	California.

49. Rana pretiosa.

Rana pretiosa, *Baird & Gir. Proc. Ac. Philad.* 1853, p. 378; *Baird, Proc. Ac. Philad.* 1855, p. 378; *Gir. U. S. Expl. Exped., Herp.* p. 20, pl. 2. ff. 13–18; *Cooper, U. S. Expl. Surv.* xii. part ii. p. 304; *Bouleng. Bull. Soc. Zool. Fr.* 1880, p. 208.

Vomerine teeth in two narrow oblique groups extending beyond the level of the hinder edge of the choanæ. Head moderate, rather depressed; snout moderate, rounded; interorbital space not quite so broad as the upper eyelid; tympanum two thirds the diameter of the eye, rather distant from it. Fingers rather slender, pointed, first extending beyond second; toes incompletely webbed; subarticular tubercles of fingers and toes small; inner metatarsal tubercle small, blunt; a small, conical, very prominent tubercle at the base of the fourth toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation does not reach the tip of the snout. Grandular lateral fold not very prominent. Greyish brown above, dark-spotted; a brown temporal spot; a white line from beneath the eye to the extremity of that spot; beneath spotted with grey. Male apparently without vocal sacs.

W. N. America.

a-d. ♂, ♀, & yg.	Sumas Prairies.	Lord J. Russell [P.].

50. Rana temporaria.

Rana temporaria, var. platyrhinus, *Günth. Cat.* p. 16.
Rösel, Hist. Ran. p. 1, pls. 1–8.
Rana temporaria, part., *L. Syst. Nat.* ed. 12, p. 357.
—— muta, *Laur. Syn. Rept.* p. 30.
—— temporaria, *Schneid. Hist. Amph.* i. p. 113; *Latr. Sal.* p. 37, *and Rept.* ii. p. 150; *Shaw, Zool.* iii. p. 97; *Daud. Rain.* p. 46, pl. 15, *and Rept.* viii. p. 94; *Merrem. Tent.* p. 175; *Penn. Brit. Zool.* iii. p. 9; *Jenyns, Brit. Vert.* p. 300; *Bonap. Faun. Ital.*; *Schinz, Faun. Helv.* p. 143; *Tschudi, Batr.* p. 79; *Bell, Brit. Rept.* p. 84; *Dum. & Bibr.* p. 359; *Koch, Ber. Senck. Ges.* 1872, p. 135; *Fatio, Vert. Suisse,* iii. p. 321; *De Betta, Faun. Ital., Rett. Anf.* p. 64; *Lessona, Atti Ac. Lincei, Mem. Cl. Sc.-fis.* i. p. 1068, pl. ii.
—— flaviventris, *Millet, Faun. Maine et Loire,* ii. p. 653.
—— cruenta, *Pallas, Zoogr. Ross.-As.* p. 12.
—— alpina, *Risso, Hist. Nat. Eur. mér.* iii. p. 93; *Bonap. l. c.*
—— scotica, *Bell, l. c.* p. 102.
—— platyrrhinus, *Steenstr. Amtl. Ber.* 24. *Vers. Kiel,* p. 131.
—— fusca, *De l'Isle, Ann. Sc. Nat.* ser. 5, xvii. 1873; *Leydig, An. Batr.* p. 116; *Bouleng. Bull. Soc. Zool. France,* 1879, p. 164; *Héron Royer, Bull. Ac. Belg.* (3) i. no. 2, p. 139.
—— temporaria, var. platyrrhina, *Schreib. Herp. Eur.* p. 125.
—— dybowskii, *Günth. Ann. & Mag. N. H.* 1876, xvii. p. 387.

Vomerine teeth in two small oblique groups extending beyond the hinder edge of the choanæ. Head moderate; snout short, blunt; interorbital space as broad as the upper eyelid; tympanum distinct, two thirds the diameter of the eye. Fingers moderate, first extending beyond second; toes at least two-thirds webbed; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle small, obtuse; outer tubercle none or scarcely distinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the tip of the snout. A moderately prominent glandular lateral fold. Upper parts greyish or brown, more or less spotted with dark brown or black; a more or less intense dark temporal spot; a light line from below the eye to the extremity of the temporal spot; sides of body largely spotted; limbs transversely barred; beneath more or less spotted. Male with two internal vocal sacs.

Europe; Northern and Temperate Asia.

a. Many spec.: ♂, ♀, & yg.	Scotland.	
b, c. Skeletons.	England.	
d–e, f–h. ♂ ♀.	England.	
i, k. ♂ ♀ (stuffed).	Cambridgeshire.	
l–m. ♀ & hgr.	Surrey.	Museum Leach.

n. ♀.	Exeter.	Museum Leach.
o. ♀.	Killarney.	Rev. E. Eaton [P.].
p, q, r–w. ♂, ♀, hgr., & yg.	Hanover.	Dr. J. E. Gray [P.].
x–y. ♂ ♀.	Coruña.	M. V. L. Seoane [C.].
z. ♂.	Sinus Abrek, E. Siberia.	Prof. Taczanowski [P.]. (Type of *Rana dybowskii.*)

51. Rana arvalis.

Rana temporaria, var. oxyrhinus et arvalis, part., *Günth. Cat.* p. 16.
Rana temporaria, *Linn. Faun. Suec.* i. p. 94.
—— temporaria, part., *L. Syst. Nat.* ed. 12, p. 357.
—— arvalis, *Nilsson, Skand. Faun.* iii. p. 42; *Collin, Naturh. Tidsskr.* 1870, p. 291; *Leydig, An. Batr.* p. 129; *Bouleng. Bull. Soc. Zool. France*, 1879, p. 169.
—— oxyrrhinus, *Steenstr. Amtl. Ber.* 24. *Vers. Kiel*, p. 131; *Siebold, Arch. f. Naturg.* 1852; *Koch, Ber. Senck. Ges.* 1872, p. 135; *Fatio, Vert. Suisse*, iii. p. 345.
—— temporaria, var. oxyrrhina, *Schreib. Herp. Eur.* p. 125.

Vomerine teeth in two oblique oval groups extending beyond the hinder edge of the choanæ. Head moderate; snout rather short, pointed, prominent; interorbital space narrower than the upper eyelid; tympanum distinct, two thirds the diameter of the eye. Fingers moderate, first extending beyond second; toes at least two-thirds webbed; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle strong, compressed, more than half the length of the first toe; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation does not reach the tip of the snout. A very prominent glandular lateral fold. Coloration much as in *Rana fusca*; sometimes a light, dark-edged vertebral stripe; belly immaculate. Male with two internal vocal sacs.

East Europe; West Asia.

a, b–d. ♂, ♀, & yg.	Sweden.	Prof. Sundevall [P.].
e. Yg.	Bohuslän.	Hr. Malm [P.].
f. ♀.	Hanover.	Dr. J. E. Gray [P.].
g–h. ♀ & yg.	North Germany.	Dr. J. E. Gray [P.].
i. Yg.	Albistan.	C. G. Danford, Esq. [P.].

52. Rana cantabrigensis.

Rana temporaria, var. silvatica, part., *Günth. Cat.* p. 17.
Rana sylvatica, *Dekay, N. Y. Faun.* iii. p. 64, pls. 21, 22; *Bouleng. Bull. Soc. Zool. France*, 1879, p. 174.
—— cantabrigensis, *Baird, Proc. Ac. Philad.* 1854, p. 62; *Bouleng. Bull. Soc. Zool. France*, 1880, p. 209.

Vomerine teeth in two oval oblique groups extending beyond the level of the hinder edge of the choanæ. Head rather depressed;

snout rather elongate, acuminate; interorbital space narrower than the upper eyelid; tympanum hardly two thirds the diameter of the eye. Fingers moderate, first extending beyond second; toes incompletely webbed; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle rounded, rather prominent; no outer tubercle. The hind limbs as in *Rana fusca*. Glandular lateral fold rather prominent. Colour much as in *R. fusca* and *arvalis*; sometimes a light, dark-edged vertebral line. Male with two internal vocal sacs.

North America.

a. Hgr. ♂.	Lake Winnipeg.	Sir J. Richardson [P.].
b. Several spec., hgr. & yg.	Great Bear Lake.	Sir J. Richardson [P.].
c. ♀.	North America.	

53. Rana iberica.

Rana iberica, *Bouleng. Bull. Soc. Zool. France,* 1879, p. 177.

Closely allied to *Rana fusca*. Tympanum smaller, not more than half the diameter of the eye; first finger not extending beyond second; hind limb longer, the tibio-tarsal articulation extending beyond the tip of the snout. Male without vocal sacs.

Spain, Portugal.

54. Rana latastii.

Rana latastei, *Bouleng. l. c.* 1879, p. 180.

Closely allied to *Rana agilis*. Tympanum smaller, scarcely two thirds the size of the eye, distant from it. Beneath spotted. Male without vocal sacs.

Milan.

55. Rana agilis.

Rana temporaria, var. arvalis, part., *Günth. Cat.* p. 16.
Rana temporaria, *Millet, Faune Maine et Loire,* ii. p. 664.
—— agilis, *Thomas, Ann. Sc. Nat.* sér. 4, iv. p. 365, pl. 7; *Fatio, Rev. Mag. Zool.* ser. 2, xiv. p. 81, pls. 6 & 7, *and Vert. Suisse,* iii. p. 333; *De l'Isle, Ann. Sc. Nat.* ser. 5, xvii.; *De Betta, Faun. Ital., Rett. Anf.* p. 65; *Lataste, Herp. Gir.* p. 233; *Leydig, An. Batr.* p. 143; *Lessona, Atti Ac. Lincei, Mem. Cl. Sc.-fis.* i. p. 1074, pl. iii.; *Bouleng. Bull. Soc. Zool. France,* 1879, p. 183.
—— gracilis, *Fatio, Rev. Mag. Zool.* sér. 2, xiv. p. 81.
—— temporaria, var. agilis, *Schreib. Herp. Eur.* p. 125.

Vomerine teeth in two oblique oval groups extending beyond the hinder edge of the choanæ. Head depressed; snout rather elongate, subacuminate; interorbital space narrower than the upper eyelid; tympanum very nearly as large as the eye, close to it. Fingers moderate, first extending beyond second; toes at least two-thirds webbed; subarticular tubercles of fingers and toes much developed; inner metatarsal tubercle rounded, blunt, rather strong; a small outer tubercle. A narrow glandular lateral fold. Above greyish brown, dark-spotted; a very dark temporal spot; a light line on the lip from the tip of the snout to the extremity of the temporal spot; hind limbs regularly cross-barred; beneath immaculate. Male without vocal sacs.

France, Switzerland, N. Italy, Austria, Greece.

a–b. ♂.	Paris.	M. F. Lataste [P.].
c–d. ♂ ♀.	Bononia.	Prof. J. J. Bianconi [P.].

56. Rana silvatica.

Rana temporaria, var. silvatica, part., *Günth. Cat.* p. 17.
Rana sylvatica, *Leconte, Ann. Lyc. N. Y.* i. p. 232; *Harlan, Sillim. Journ.* ser. 1, x. p. 58, *and Journ. Ac. Philad.* v. part ii. p. 338; *Holbr. N.-Amer. Herp.* i. p. 95, pl. 15; *Dum. & Bibr.* p. 362; *Wied, Nova Acta Ac. Leop.* xxxvii. p. 114; *De l'Isle, Ann. Sc. Nat.* sér. 5, xvii.
—— pensylvanica, *Harlan, Sillim. Journ. l. c.*; *Bouleng. Bull. Soc. Zool. France*, 1879, p. 188.

Very closely allied to *R. agilis*. Tympanum not quite so close to the eye. The tibio-tarsal articulation extends to the tip of the snout or somewhat beyond. According to De l'Isle, the male is provided with two internal vocal sacs.

North America.

a–c. ♀.	N. America.	Edward Doubleday, Esq. [P.].
d–e. Yg.	N. America.	Dr. J. Green [P.].
f, g–i, k–l. ♀, hgr., & yg.	N. America.	

57. Rana japonica.

Rana temporaria, var. japonica, *Günth. Cat.* p. 17.
Rana temporaria, *Schleg. Faun. Japon., Rept.* p. 109, pl. 3.
—— silvatica, part., *Hallow. Proc. Ac. Philad.* 1860, p. 500; *Günth. Rept. Brit. Ind.* p. 409; *Camerano, Atti Ac. Torino*, 1879, p. 876.
—— japonica, *Bouleng. Bull. Soc. Zool. France*, 1879, p. 190.

Resembles very much *R. agilis* and *sylvatica*. Snout longer still; tympanum smaller than in *R. agilis*, not so close to the eye. Tibio-tarsal articulation reaching beyond the tip of the snout. No outer metatarsal tubercle. A light line from beneath the eye to the extremity of the temporal spot; belly immaculate. Male with two internal vocal sacs.

Japan, China.

a–c. ♀ & hgr.	Japan.	Leyden Museum.
d. ♀.	Szechuen.	R. Swinhoe [C.].
e. ♀.	Ningpo.	
f–g. ♀ & yg.	China.	R. Swinhoe [C.].

58. Rana guentheri. (Plate IV. fig. 2.)

Vomerine teeth in two slightly oblique series commencing close to the inner front edge of the choanæ. Head moderate, depressed; snout rather long, subacuminate, with distinct canthus rostralis; interorbital space as broad as the upper eyelid; tympanum very distinct, nearly as large as the eye. Fingers rather slender, first extending beyond second; toes moderate, rather more than two-thirds webbed; subarticular tubercles of fingers and toes well developed; inner metatarsal tubercle small, oval; a rather indistinct tubercle at the base of the fourth toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. A moderately prominent glandular lateral fold; another from beneath the eye to the shoulder. Grey above, spotted with black on the sides; glandular lateral fold black-edged; tympanum reddish brown; hind limbs cross-barred; hinder side of thighs black and white marbled; beneath yellowish, the throat speckled with brown. From snout to vent 80 millim.

S. China.

a–b. ♀.	Amoy.	R. Swinhoe [P.].
c. Yg.	China.	

59. Rana palmipes.

Rana palmipes, *Spix, Nov. Spec. Test. Ran.* p. 29, pl. 5. f. 1; *Peters, Mon. Berl. Ac.* 1872, p. 205, & 1873, p. 622.
—— juninensis, *Tschudi, Faun. Per., Herp.* p. 64.
Ranula gollmeri, *Peters, Mon. Berl. Ac.* 1859, p. 402.
Rana affinis, *Peters, l. c.* p. 402, & 1871, p. 402.
—— affinis, *Cope, Proc. Ac. Philad.* 1866, p. 130, & 1868, p. 117.
Pohlia palmipes, *Steindachn. Novara, Amph.* p. 15, pl. i. f. 5; *Günth. Zool. Rec.* iv. p. 147.
Rana vaillanti, *Brocchi, Bull. Soc. Philom.* (7) i. p. 175, *and Miss. Sc. Mex., Batr.* p. 11, pl. ii. f. 1.

Vomerine teeth in two small groups on a level with the hinder edge of the choanæ. Head moderate; snout rounded; interorbital space nearly as broad as the upper eyelid; tympanum distinct, at least two thirds the diameter of the eye. Fingers moderate, first extending slightly beyond second; toes moderate, with small terminal disks, entirely webbed; subarticular tubercles of fingers and toes not much developed; a single, small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches generally between the eye and the tip of the snout. A moderately prominent glandular lateral fold; another glandular fold from beneath the eye to the shoulder. Olive or brown above, immaculate or with small blackish spots; limbs cross-barred; hinder side of thighs black and whitish marbled; yellowish white beneath, with small brownish specks on the throat or rounded brown spots on the belly and under the thighs. Male without vocal sacs.

C. and S. America.

a. Yg.	Mexico.	M. Sallé [C.].
b. ♂.	Vera Paz.	O. Salvin, Esq. [C.].
c. ♀.	Dueñas, Guatemala.	O. Salvin, Esq. [C.].
d–e. ♂.	Lanquin, Guatemala.	O. Salvin, Esq. [C.].
f. ♀.	Pebas.	
g–h. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].
i. ♀.	Sarayacu, Ecuador.	Mr. Buckley [C.].

60. **Rana copii.**

Ranula brevipalmata, *Cope, Proc. Ac. Philad.* 1874, p. 131.

Nearly allied to *Rana palmipes*, but with the web of the toes reaching only the bases of the ultimate, or, in the fourth toe, the penultimate phalange. Tympanum as large as the eye. The tibiotarsal articulation reaches the anterior border of the orbit. Above olive; below white; femora and tibiæ marbled with black behind.

Nauta, Upper Amazon.

61. **Rana nigrilatus.**

Ranula nigrilatus, *Cope, l. c.*

Allied to *Rana palmipes*. Head longer; tympanum two thirds the width of the eye; first and second fingers equal; a tarsal dermal fold; tibio-tarsal articulation reaching anterior border of orbit. Dark brown above; sides black; femora and tibiæ black, marbled behind; lower surfaces closely marbled with dark brown.

Nauta.

62. **Rana chrysoprasina.**

Ranula chrysoprasina, *Cope, Proc. Ac. Philad.* 1866, p. 130.
Trypheropsis chrysoprasinus, *Cope, Proc. Ac. Philad.* 1868, p. 117, *and Journ. Ac. Philad.* (n. s.) viii. 1876, p. 114, pl. 23. f. 12.

Vomerine teeth in two small convergent fasciculi behind opposite nares. Snout acuminate, projecting; tympanum two thirds the width of the eye. Toes fully and widely palmate; tips of fingers and toes slightly dilated; one minute metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin shagreened above; a glandular fold on each side. Colour brilliant lacgreen, the groin and belly approaching golden; a golden band from lip to shoulder and a faint one on each side of the back; limbs above, and tarsus and forearm below, black, the femur with a few golden spots on black ground behind; head dark above; from eye to shoulder black; below pale yellowish green immaculate, except some dark shades on sternal regions.

Costa Rica.

63. Rana cæruleopunctata.

Rana cæruleopunctata, *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 264, pl. 15. f. 1.
Ranula cæruleopunctata, *Cope, Proc. Ac. Philad.* 1866, p. 130.
Hylarana cæruleopunctata, *Steindachn. Novara, Amph.* p. 48.

Vomerine teeth in two small groups between the choanæ. Head moderate; snout acuminate, with distinct canthus rostralis; tympanum two thirds the width of the eye. Fingers moderate, first not extending beyond second; toes two-thirds webbed; tips of fingers and toes slightly dilated; subarticular tubercles well developed; a small oval inner, and a small rounded outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches the tip of the snout. Skin of the upper parts shagreened; a narrow glandular lateral fold; a glandular fold from the angle of the mouth to the shoulder. Above reddish brown, spotted with darker; hind limbs cross-barred; hinder side of thighs with yellow spots.

America ?

64. Rana fuscigula.

Rana fuscigula, *Günth. Cat.* p. 18.
Rana fuscigula, *Dum. & Bibr.* p. 386; *Smith, Ill. S. Afr., Rept., App.* p. 22.

Vomerine teeth in two slightly oblique oval groups on a level with the hinder edge of the choanæ. Head moderate; snout rounded, with rather indistinct canthus rostralis; interorbital space as broad as, or nearly as broad as, the upper eyelid; tympanum distinct, two thirds the size of the eye. Fingers moderate, first not extending beyond second; toes moderate, nearly entirely webbed; subarticular tubercles of fingers and toes moderate; a single, small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between eye and tip of snout. Skin smooth, or with elongate warts along the back. Brown above; sometimes a light vertebral stripe; white below, with brown spots on the throat and breast. Male with two internal vocal sacs.

W. and S. Africa.

a. ♀.	West Africa.	L. Fraser [C.].
b–c. ♀.	Sierra Leone.	Sir A. Smith [P.].
d. ♀.	Cape of Good Hope.	Earl of Derby [P.].
e, f. ♂.	Cape of Good Hope.	
g. ♀.	Africa.	

65. Rana angolensis.

Rana delalandii, *Günth. Cat.* p. 19.
Rana delalandii, *Dum. & Bibr.* p. 388; *Smith, Ill. S. Afr., Rept.* pl. 77. f. 1.
—— angolensis, *Bocage, Jorn. Sc. Lisb.* 1868, p. 73.

Vomerine teeth in two transverse series between the choanæ. Head moderate; snout long, pointed; interorbital space narrower than the upper eyelid; tympanum distinct, nearly as large as the eye. Fingers moderate, first not extending beyond second; toes rather slender, two-thirds webbed; subarticular tubercles of fingers and toes moderate; a single, small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. A few narrow, interrupted glandular lines along the back; no glandular fold from the eye to the shoulder. Olive above, with large black spots, transversely dilated upon the limbs; sometimes a light vertebral stripe; a black temporal spot; a white line from below the eye to the angle of the mouth; sides of body and hinder side of thighs blackish, white-marbled. Beneath immaculate or with blackish vermiculations on the throat and breast. Male with two internal vocal sacs.

W. and S. Africa.

a. ♀.	West Africa.	Prof. Barboza du Bocage [P.].
b. Yg.	Cape of Good Hope.	Sir A. Smith [P.].
c. ♀.	Cape of Good Hope.	
d. ♂.	Kaffraria.	F. P. M. Weale, Esq. [P.].
e, f. ♀ & yg.	King-Williamstown.	H. Trevelyan, Esq. [P.].
g. ♀.	Natal.	T. Ayres [C.].
i, k. ♀ & yg.	South Africa.	Sir A. Smith [P.].
l. Yg.	South Africa.	Charles Darwin, Esq. [P.].

66. Rana oxyrhynchus.

Rana oxyrhynchus, *Günth. Cat.* p. 19.
Rana oxyrhynchus, (*Sundev.*) *Smith, Ill. S. Afr., Rept.* pl. 77. f. 2.

Vomerine teeth in two straight series, their outer edge in contact with the inner front edge of the choanæ. Head moderate; snout very long, pointed; interorbital space as broad as the upper eyelid; tympanum distinct, nearly as large as the eye. Fingers moderate, first not extending beyond second; toes moderate, entirely webbed; subarticular tubercles of fingers and toes moderate; a very small inner metatarsal tubercle; no outer one. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches far beyond the tip of the snout. Six or eight narrow glandular folds along the back; a strong glandular fold from beneath the eye to the arm. Grey above, darker spotted; hinder side of thighs with black and white reticulations. Male with two external vocal vesicles opening by two slits below the lower jaw.

W. and S. Africa.

a–b. ♂.	Braganca, Angola.	Prof. Barboza du Bocage [P.].
c–d. ♀ & hgr.	Carangigo.	Dr. Welwitsch [C.].
e. ♀.	Cape of Good Hope.	Sir A. Smith [P.].
f. ♀.	Natal.	Sir A. Smith [P.].

67. Rana longirostris.

Rana longirostris, *Peters, Mon. Berl. Ac.* 1870, p. 646, pl. 1. f. 5.

Very closely allied to *Rana oxyrhynchus.* Vomerine series convergent backwards; fourth toe not very much longer than third and fifth; web not emarginate; metatarsus with two tubercles, the outer one not very prominent; slits for the vocal vesicles much longer; sides of the head black.

Keta, Guinea.

68. Rana trinodis.

Rana trinodis, *Boettger, Abhandl. Senck. Ges.* xii. p. 114, pl. 1. f. 2.

Vomerine teeth in two slightly oblique series commencing from the inner front edge of the choanæ. Head moderate; snout long, pointed, with rather indistinct canthus rostralis; interorbital space narrower than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers moderate, first not extending beyond second; toes moderate, nearly entirely webbed; subarticular tubercles small; two oval metatarsal tubercles, the inner compressed, prominent, the outer flat; another flat tubercle below the tibio-tarsal articulation.. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin with rather indistinct longitudinal folds. Olive above, spotted with blackish; a light vertebral line; hinder side of thighs with a light, black-edged stripe; limbs cross-barred. (Male without external vocal sacs.)

Senegambia.

a–b. ♀ & yg.	Senegambia.	M. G. A. Boulenger [P.].

69. Rana mascareniensis.

Rana superciliaris, *Günth. Cat.* pp. 17 & 132, pl. i. f. B.
Rana bibronii, *Günth. l. c.* p. 18.
Rana mascareniensis, *Günth. l. c.* p. 18.
Rana esculenta, *Aud. Descr. Egypte, Rept., Suppl.* i. p. 161, pl. 2. f. 11–12.
—— mascareniensis, *Dum. & Bibr.* p. 350; *Bell, Zool. Beagle, Rept.* p. 32, pl. 16. f. 2; *Lataste, Bull. Soc. Zool. France,* 1879, p. 89; *Bouleng. eod. loc.* p. 92.
—— bibronii, *Hallow. Proc. Ac. Philad.* 1845, p. 249; *Peters, Mon. Berl. Ac.* 1863, p. 78.
—— mossambica, *Peters, Arch. f. Naturg.* 1854, p. 626.
—— nilotica, *Seetzen, Reise Syr. Pal. Eg.* iii. p. 490.
—— savignyi, *Jan, Cenni Mus. Civ. Milano,* p. 52.
—— idæ, *Steind. Verh. zool.-bot. Ges. Wien,* 1864, p. 266, pl. 12. f. 1.
—— nigrescens, *Steindachn. l. c.* f. 2.
—— anchietæ, *Bocage, Proc. Zool. Soc.* 1867, p. 843.

Rana porosissima, *Steindachn. Novara, Amph.* p. 18, pl. 1. f. 9.
—— subpunctata, *Bocage, Jorn. Sc. Lisb.* 1868, i. p. 73.
—— abyssinica, *Peters, Sitzb. Ges. naturf. Fr. Berl.* 1881, p. 163.

Vomerine teeth in two short oblique series commencing from the inner front edge of the choanæ. Head moderate; snout pointed, variable in length; interorbital space as broad as, or rather narrower than, the upper eyelid; tympanum distinct, two thirds the width of the eye. Fingers moderate, first not extending beyond second; toes slender, two-thirds webbed; subarticular tubercles of fingers and toes moderate; a very small inner metatarsal tubercle; no outer one. Hind limb very variable in length; carried forwards along the body, the tibio-tarsal articulation reaches either the eye, or beyond the snout, or between these two points. Six or eight glandular folds along the back, the outer generally more prominent; a strong glandular fold from beneath the eye to the arm. Brown or olive above, darker spotted; sometimes a light dorsal stripe; limbs dark-banded; hinder side of thighs black, white-marbled; beneath immaculate. Male with two black external vocal vesicles opening by two slits below the lower jaw.

Africa.

a–c. ♂.	Barbary.	A. Newton, Esq. [P.].
d. Several spec., hgr.	Gambia.	Sir A. Smith [P.].
e–f. ♂ ♀.	Gaboon.	H. Ansell, Esq. [P.].
g. ♀.	Gaboon.	
h. ♂.	Sierra Leone.	(Type of *R. superciliaris.*)
i–k. ♂.	Braganca, Angola.	Prof. B. du Bocage [P.].
l. Hgr.	Abyssinia.	Sir A. Smith [P.].
m–o. ♂ ♀.	Sooroo Pass, Abyssinia.	W. Jesse, Esq. [C.].
p–q. ♀ & hgr.	Sooroo Pass, Abyssinia.	W. T. Blanford, Esq. [P.].
r–u. Hgr., ♂, & ♀.	Ain Samhar.	W. T. Blanford, Esq. [P.].
v. Yg.	Zanzibar.	Sir J. Kirk [C.].
w–x. ♂.	Seychelles.	Dr. P. Wright [P.].
y. ♂.	Mauritius.	Charles Darwin, Esq. [P.].
z–a. Yg.	Madagascar.	

70. Rana grayi.

Rana grayi, *Günth. Cat.* p. 18.
Rana grayi, *Smith, Ill. S. Afr., Rept.* pl. 78. f. 2.
Strongylopus grayi, *Steind. Novara, Amph.* p. 21.

Vomerine teeth in two long, scarcely oblique series, transversely on a level with the front edge of the choanæ. Head moderate; snout rather short, rounded; interorbital space narrower than the upper eyelid; tympanum distinct, half the size of the eye. Fingers rather slender, first extending slightly beyond second; toes slender, webbed at the base; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle small, oval, very prominent; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or somewhat beyond. Skin with narrow, interrupted glandular folds along the back. Light brown above, with rounded, sometimes confluent dark brown spots; sometimes a light vertebral line or a broad unspotted zone along the middle of the back; a dark temporal spot; beneath immaculate. Male with two internal vocal sacs.

S. Africa.

a–c. ♀ & yg.	South Africa.	
d–h. ♀.	South Africa.	Sir A. Smith [P.].
i–k. ♀.	Cape of Good Hope.	Sir A. Smith [P.].
l–m. ♂.	Kaffraria.	F. P. M. Weale, Esq. [P.].

71. Rana fasciata.

Rana fasciata, *Günth. Cat.* p. 20.
Strongylopus fasciatus, (*Boie*) *Tschudi, Batr.* p. 79; *Steind. Novara, Amph.* p. 21.
Rana fasciata, *Dum. & Bibr.* p. 389; *Smith, Ill. S. Afr., Rept.* pl. 78. f. 1.
—— delalandii, *Bell, Zool. Beagle, Rept.* p. 31, pl. 16. f. 1.
Strongylopus oxyrhynchus, *Fitzing. Sitzb. Ac. Wien,* xlii. p. 414.

Vomerine teeth in two long, nearly straight series, transversely on a level with the front edge of the choanæ. Head moderate; snout long, rather pointed; interorbital space as broad as the upper eyelid; tympanum distinct, half the size of the eye. Fingers slender, first not extending beyond second; toes very slender, fourth at least as long as the distance between vent and tympanum, webbed at the base; subarticular tubercles of fingers and toes moderate; inner metatarsal tubercle small, oval, little prominent; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches much beyond the tip of the snout. Skin of the back with rather indistinct longitudinal folds. Light brown above, with four or six longitudinal dark brown stripes on the back; a dark temporal spot; beneath immaculate. Male with two internal vocal sacs.

S. Africa.

a. ♀.	S. Africa.	C. Darwin, Esq. [P.]. (Original specimen of Prof. Bell's description and figure.)
b, c. Several spec.: ♂, ♀, & yg.	S. Africa.	Sir A. Smith [P.].
d. ♀.	Kaffraria.	F. P. M. Weale, Esq. [P.].

72. Rana macrodactyla.

Hylarana macrodactyla, *Günth. Cat.* p. 72, pl. ii. f. C.
Hylorana macrodactyla, *Günth. Rept. Brit. Ind.* p. 424; *Stoliczka, Proc. As. Soc.* 1872, p. 104.

Vomerine teeth in two oblique series between the choanæ. Head moderate, depressed; snout long, subacuminate; interorbital space broader than the upper eyelid; tympanum very distinct, nearly as large as the eye. Fingers slender, first not extending beyond second; toes very slender, fourth about as long as the distance between vent and tympanum, half webbed; tips of fingers and toes slightly swollen; subarticular tubercles moderate; inner metatarsal tubercle very small; a small outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. A narrow glandular lateral fold. Brown above, spotted with darker; glandular folds and a vertebral line light; beneath immaculate.

S. China; Birmah.

a–b. ♀ & hgr.	Hong Kong.	J. C. Bowring, Esq. [P.].	Types.
c–d. ♀ & hgr.	China.	J. R. Reeves, Esq. [P.].	
e. Hgr.	China.		

73. Rana andersonii.

Polypedates yunnanensis, *Anders. Anat. Zool. Res. Yunnan,* p. 846, pl. 78. f. 3.

Vomerine teeth in two small groups between the choanæ. Head moderate; snout short, rounded, with rounded canthus rostralis; interorbital space a little broader than the upper eyelid; tympanum distinct, half the width of the eye. Fingers moderate, first not extending beyond second; toes moderate, nearly entirely webbed; tips of fingers and toes dilated into very small disks; subarticular tubercles rather small; a single, small, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Flat warts on the sides of the body; a fold above the tympanum. Olive above, indistinctly spotted; limbs cross-barred; beneath immaculate. Male with two internal vocal sacs.

Yunnan.

a. ♂.	Hotha Valley, Yunnan.	Dr. J. Anderson [P.]. (One of the types.)

74. Rana beddomii.

Polypedates beddomii, *Günth. Proc. Zool. Soc.* 1875, p. 571, pl. 63. f. B*.

—— brachytarsus, *Günth. l. c.* p. 572.

Vomerine teeth in two slightly oblique oval groups, just behind the level of the hinder edge of the choanæ. A free, pointed, conical papilla on the middle of the tongue. Head moderate, rather depressed; snout obtuse, with moderate canthus rostralis; interorbital space as broad as, or somewhat narrower than, the upper eyelid; tympanum distinct, two thirds the width of the eye. Fingers moderate, first extending slightly beyond second; toes two-thirds webbed; tips of fingers and toes dilated into small disks; subarticular tubercles well developed; a single, small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches generally beyond the tip of the snout. Skin of the back with short longitudinal glandular folds; a strong glandular fold from the eye to the shoulder; lower surfaces smooth. Light brown above, indistinctly spotted; sometimes a light vertebral stripe; a dark cross band between the eyes; a black band along the canthus rostralis and a black temporal spot; limbs more or less distinctly cross-barred; beneath immaculate. Male without vocal sac.

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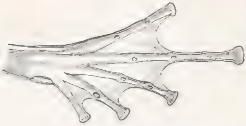
* In the table of measurements the length of the tarsus is indicated 11 millim.; this is a misprint for 17.



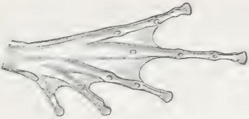
Lower surface of foot.

W. India.

a, b, c–g. Many spec.: ♀, hgr., & yg.	Malabar.	Col. Beddome [C.].	Types of *Polypedates beddomii.*
h–i. Hgr.	Travancore.	Col. Beddome [C.].	
k. Several spec.: ♂, ♀, & yg.	Sevagherry.	Col. Beddome [C.].	
l–n. ♀.	Anamallays.	Col. Beddome [C.].	
o. Hgr.	Anamallays.	Col. Beddome [C.].	Types of *Polypedates brachytarsus.*
p. ♀.	Sevagherry.	Col. Beddome [C.].	
q. Several spec.	Sevagherry.	Col. Beddome [C.].	
r–s. Yg.	N. Canara.	T. C. Jerdon, Esq. [P.].	

75. **Rana semipalmata.** (Plate IV. fig. 3.)

Vomerine teeth in two slightly oblique oval groups just behind the level of the hinder edge of the choanæ. Tongue with a free conical papilla in the middle. Head moderate, rather depressed; snout obtuse, with moderate canthus rostralis; interorbital space as broad as the upper eyelid; tympanum distinct, about as large as the eye. Fingers moderate, first extending a little beyond second; toes half-webbed; tips of fingers and toes dilated into small disks; subarticular tubercles well developed; a single, small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin of the back with short longitudinal glandular folds; lower surfaces smooth. Brown above; loreal and temporal regions blackish; a dark cross band between the eyes; limbs cross-barred; throat and breast mottled with brown. Male without vocal sac.



Lower surface of foot.

From snout to vent 36 millim.

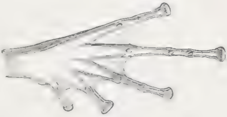
This species is intermediate between *R. beddomii* and *R. leptodactyla*. It differs from both, by the much larger tympanum; from the former, by the toes, which are only half webbed; from the latter, by the length of the first finger, which is superior to that of the second, and by the more extensive web between the toes.

Malabar.

a–b. ♂ ♀. Malabar. Col. Beddome [C.].

76. Rana leptodactyla.

Polypedates brevipalmatus, *Günth. Proc. Zool. Soc.* 1875, d. 572.



Lower surface of foot.

Vomerine teeth in two slightly oblique oval groups just behind the level of the hinder edge of the choanæ. Tongue with a free, pointed, conical papilla in the middle. Head moderate, rather depressed; snout blunt, with moderate canthus rostralis; interorbital space as broad as, or rather narrower than, the upper eyelid; tympanum distinct, half the width of the eye. Fingers moderate, first not extending as far as second; toes one-third webbed; tips of fingers and toes dilated into small disks; subarticular tubercles well developed; a small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or beyond, the length of the limb being very variable. Skin of the back generally with short longitudinal glandular folds; lower surfaces smooth. Olive or brownish above, mottled with darker; a more or less distinct subtriangular dark spot between the eyes, often limited in front by a light cross band; sometimes a light vertebral stripe; a black band along the canthus rostralis, and a black temporal spot; limbs cross-barred; beneath, immaculate or spotted with brown, sometimes brown dotted with white.

S.W. India.

a–b. Many spec.: ♀, hgr., & yg.	Malabar.	Col. Beddome [P.].	
c. Several spec., ♀.	Malabar.	Col. Beddome [P.].	Types of *Polypedates brevipalmatus.*
d. ♀.	Anamallays.	Col. Beddome [P.].	
e–g. Hgr.	——?	T. C. Jerdon, Esq. [P.].	

77. Rana diplosticta.

Ixalus diplostictus, *Günth. Proc. Zool. Soc.* 1875, p. 574, pl. 63. f. c.

This species is very closely allied to, and perhaps not different from, the preceding. The canthus rostralis is rather more angular and the loreal regions not quite so oblique. A black spot above the loin.

Malabar.

a–d. ♀ & hgr.	Malabar.	Col. Beddome [P.]. (Types.)
e–f. Hgr.	Malabar.	T. C. Jerdon, Esq. [P.].

78. Rana margariana.

Hylarana margariana, *Anders. Anat. Zool. Res. Yunnan,* p. 846, pl. 78. f. 4.

Vomerine teeth very feebly developed, in two oblique series between the choanæ. Head moderate, rather flat; canthus rostralis rounded, with the loreal region deeply concave; tympanum distinct, nearly as large as the eye. Fingers moderate, first slightly longer than second, with a rudimentary web (?); toes moderate, nearly entirely webbed; a small elongated inner metatarsal tubercle; disks of fingers very feebly developed, of toes more strongly so. A narrow glandular fold from behind the eye along the side of the body. Olive-brown above, with a dark, almost blackish band from the snout through the eye, along the sides of the groin, and a narrow pale line from below the eye to the shoulder; limbs cross-barred; throat and chest almost black from the profusion of dark-brown pustulations.

Irâwaddy, Yunnan.

79. **Rana elegans.** (Plate V. fig. 1.)

Hylarana albolabris, part., *Günth. Cat.* p. 143.

Vomerine teeth in two slightly oblique series commencing close to the inner front edge of the choanæ. Head moderate, rather depressed; snout long, pointed; interorbital space as broad as, or broader than, the upper eyelid; tympanum very distinct, nearly as large as the eye. Fingers rather long, first extending beyond second; toes moderate, nearly entirely webbed; fingers and toes with slightly swollen tips and strong subarticular tubercles; inner metatarsal tubercle small, oval; a small rounded tubercle at the base of the fourth toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. A prominent, rather broad, glandular lateral fold; another from beneath the eye to beyond the shoulder. Reddish brown above, sides of head and body darker; a light line on the upper lip, sometimes missing; flanks and hinder side of thighs marbled with dark brown; beneath immaculate, or brown-spotted on the throat and breast. Male with a large flat gland at the base of the arm, and two much developed subgular vocal vesicles.

W. Africa.

a–b. ♂ ♀.	W. Africa.	Sir A. Smith [P.].
c. ♀.	—— ?	Sir J. Richardson [P.].

80. **Rana albolabris.** (Plate V. fig. 2.)

Hylarana albolabris, *Günth. Cat.* p. 73.
Rana albolabris, *Hallow. Proc. Ac. Philad.* 1856, p. 153.
Limnodytes albolabris, *A. Dum. Arch. Mus.* x. p. 226, pl. 18. f. 2.

Vomerine teeth in two small very oblique groups extending beyond the level of the hinder edge of the choanæ. Head moderate, depressed; snout long, rather pointed; interorbital space as broad as, or somewhat broader than, the upper eyelid; tympanum very distinct, nearly as large as the eye. Fingers rather long, first extending beyond second; toes moderate, nearly entirely webbed; disks of fingers and toes well developed; subarticular tubercles strong; inner metatarsal tubercle small, rounded; a rather indistinct tubercle at the base of the fourth toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. A rather narrow glandular lateral fold; a glandular fold from beneath the eye to the shoulder. Brown above, sides of head and body darker; a white line on the upper lip; limbs cross-barred; whitish beneath, more or less spotted on the throat, breast, and limbs. Male with two internal vocal sacs, and a flat oval gland at the base of the arm.

W. Africa.

a, b. ♂.	Gaboon.

c. ♀.	Fernando Po.	Mr. Fraser [C.].
d. ♀.	Fernando Po.	Sir A. Smith [P.].
e. ♀.	Fernando Po.	

81. **Rana macularia.**

Rana malabarica, part., *Günth. Cat.* p. 11.
Hylarana malabarica, part., *Günth. l. c.* pp. 131 and 142.
Limnodytes macularius, *Blyth, Journ. As. Soc.* xxiii. p. 299.
Hylorana macularia, *Günth. Rept. Brit. Ind.* p. 425, pl. 26. f. C.
? Hylorana leptoglossa, *Cope, Proc. Ac. Philad.* 1868, p. 139.

Vomerine teeth in two oblique groups between the choanæ. Head moderate, depressed; snout long, subacuminate; interorbital space broader than the upper eyelid; tympanum very distinct, as large as the eye. Fingers slender, first extending beyond second; toes slender, rather more than half webbed; tips of fingers and toes slightly swollen; subarticular tubercles well developed; inner metatarsal tubercle small, oval; a rather large outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so far. A rather broad glandular lateral fold; a short glandular fold from beneath the eye to the shoulder, followed by a row of more or less confluent glandules, simulating a second glandular fold. Brown above, sides of head and body darker; some dark, sometimes confluent spots on the middle of the back; upper lip and lower glandular fold white; hinder side of thighs blackish- and white-marbled; beneath, immaculate or brown-spotted on the throat. Male with two not much developed external vocal sacs beneath the angle of the mouth.

Ceylon.

a. ♀.	Ceylon.	Dr. Kelaart.
b, c, d–e. ♂, ♀, & yg.	Ceylon.	

82. **Rana malabarica.**

Rana malabarica, (*Bibr.*) *Tschudi, Batr.* p. 80; *Dum. & Bibr.* p. 635, pl. 86. f. 1.
Hylorana malabarica, *Günth. Rept. Brit. Ind.* p. 426; *Stoliczka, Proc. As. Soc.* 1872, p. 105.

Vomerine teeth in two oval oblique groups between the choanæ. Head moderate, depressed; snout moderate, subacuminate; interorbital space rather narrower than the upper eyelid; tympanum very distinct, nearly as large as the eye. Fingers moderate, first extending beyond second; toes rather short, half webbed; tips of fingers and toes swollen; subarticular tubercles very strong; inner metatarsal tubercle oval, blunt; a large, rounded tubercle at the base of the fourth toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. A broad, not very prominent glandular lateral fold; a strong glandular fold from beneath the eye to the shoulder, followed by one or two glandules. Upper part of the head and back bright vinaceous red, sometimes with a few black specks; sides of head and body and upper part of limbs blackish brown, the latter beautifully marbled with whitish; flanks with a series of white spots, sometimes confluent; a white line on the upper lip; beneath whitish, immaculate or brown-spotted, the spots sometimes covering nearly entirely the throat and breast.

Malabar; Bombay.

a. Several spec.: ♀, hgr., & yg.	Malabar.	Col. Beddome [P.].
b, c–d. Hgr.	Matheran.	Dr. Leith [P.].

83. **Rana galamensis.**

Rana galamensis, *Dum. & Bibr.* p. 367.

Habit and proportions of *R. malabarica*. Series of vomerine teeth longer and wider apart; web between the toes shorter; subarticular tubercles less developed; glandular lateral fold narrower and more prominent; a single metatarsal tubercle. Brown above; loreal and temporal regions black; a white line round the upper lip; another white, black-edged line along each side of the body; hinder side of thighs black- and white-marbled; throat and chest brownish grey.

Senegal.

84. **Rana curtipes.**

Rana curtipes, *Jerdon, Journ. As. Soc.* xxii. p. 532.
Pachybatrachus robustus, *Mivart, Proc. Zool. Soc.* 1868, p. 557.
Clinotarsus robustus, *Mivart, Proc. Zool. Soc.* 1869, p. 227.
Hylorana curtipes, *Jerdon, Proc. As. Soc.* 1870, p. 83.

Vomerine teeth scarcely developed, sometimes indistinct, in two slightly oblique series on a level with the hinder edge of the choanæ. Head large; snout short, rounded, with well-marked canthus rostralis; interorbital space broader than upper eyelid; tympanum distinct, as large as the eye. Fingers moderate, first extending beyond second; toes rather short, nearly entirely webbed; tips of fingers and toes swollen; subarticular tubercles much developed; inner metatarsal tubercle small, oval; a rather large, flat tubercle at the base of the fourth toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. A moderately prominent glandular lateral fold; another behind the tympanum to the shoulder. Grey or brown above, with or without blackish dots; lateral fold margined with blackish; a blackish oblique spot below the eye; light brown beneath, the throat sometimes dark brown. Male with a subgular vocal sac.

The recently transformed young have on each side of the back, behind the tympanum, a very distinct parotoid gland, as in *Rana alticola.* This gland generally disappears with age, though I see it quite distinct in a nearly adult female.

Canara; Malabar.

a. ♀.	North Canara.	Col. Beddome [P.].
b. Many spec.: ♂, ♀, & yg.	Malabar.	Col. Beddome [P.].
c–d. ♀.	—— ?	Col. Beddome [C.], T. C. Jerdon, Esq. [P.]. (As typical of *Rana curtipes.*)
e. ♂.	—— ?	Prof. St. George Mivart [P.]. (Type of *Pachybatrachus robustus.*)

85. Rana alticola.

Hylorana pipiens, *Jerdon, Proc. As. Soc.* 1870, p. 83; *Stoliczka, Proc. As. Soc.* 1872, p. 106.

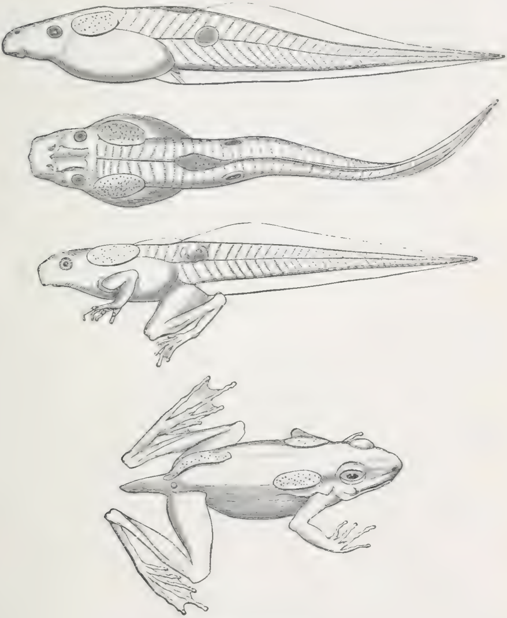
? Hylorana nicobariensis, *Stoliczka, Journ. As. Soc.* 1870, p. 150, pl. 9. f. 2.

Vomerine teeth not much developed, in two oblique series between the choanæ. Head moderate, depressed; snout rather long, more or less acuminate, with well-marked canthus rostralis; interorbital space broader than the upper eyelid; tympanum distinct, two thirds the size of the eye. Fingers rather slender, first not extending beyond second; toes moderate, nearly entirely webbed; tips of fingers and toes swollen into very distinct disks; subarticular tubercles well developed, inner metatarsal tubercle very small, scarcely prominent; a rather indistinct outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches a little beyond the tip of the snout. A slightly prominent, narrow glandular lateral fold; another fold from behind the tympanum to the shoulder. Light brown above, scarcely or not spotted; sides of the head and back darker; glandular folds whitish, black-margined; limbs more or less distinctly cross-barred; whitish beneath, the throat and breast sometimes nearly entirely covered with brown spots leaving a median line immaculate.

The tadpole of this species is most remarkable, being provided on each side of the front of the back with a large oval parotoid, well defined, and crowded with pores. A similar, but elongate, glandular patch is seen above the root of the tail. The head and body are rather elongate, and pass gradually into the tail, which is very thick at the base and ends in an acute point; the length of the tail is about twice that of head and body. The spiraculum is lateral, just below the middle of the left parotoid. The colour is uniform brown, lighter beneath, with a dark, light-edged ocellus on each side of the tail near its base. Recently transformed young are still provided with very distinct parotoids and the parotoid-like patch on the hind part of the back; they have not yet a glandular lateral fold.

Khasi Hills; Sikkim; Moulmein.

a.	Many spec.: ♀, hgr., yg., & larvæ.	Shillong.	T. C. Jerdon, Esq. (As typical of *Hylorana pipiens.*)
b.	Yg.	Moulmein.	Prof. W. K. Parker [P.].



Rana alticola.
Larvæ.

86. Rana temporalis.

Rana malabarica, part., *Günth. Cat.* p. 11.
Hylarana malabarica, part., *Günth. l. c.* pp. 131 & 142.
Hylarana malabarica, *Kelaart, Prodr. Faun. Zeyl.* i. p. 191.
? Rana flavescens, *Jerdon, Journ. As. Soc.* 1854, p. 531.
Hylorana temporalis, *Günth. Rept. Brit. Ind.* p. 427, pl. 26. f. G; *and Proc. Zool. Soc.* 1875, p. 569.
—— flavescens, *Jerdon, Proc. As. Soc.* 1870, p. 83.

Vomerine teeth in two oblique series extending beyond the level of the hinder edge of the choanæ. Head moderate, depressed; snout moderate, subacuminate; loreal region strongly concave; interorbital space as broad as, or rather broader than, the upper eyelid; tympanum very distinct, three fourths the size of the eye. Fingers moderate, first extending slightly beyond second; toes moderate, nearly entirely webbed; tips of fingers and toes dilated into rather large disks; subarticular tubercles well developed; inner metatarsal tubercle small, oval; a small outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or a little beyond. A narrow glandular lateral fold. Brown above; loreal and temporal regions, and sometimes also the sides of the body, dark brown; limbs distinctly cross-barred; throat and breast more or less speckled with brown. Male with two internal vocal sacs and an oval flat gland on the inner side of the arm.

Ceylon; S. India.

a–c, d–f, g–h. ♂, ♀, hgr., & yg.	Ceylon.	(Types).
i–m. Yg.	Ceylon.	G. H. K. Thwaites, Esq. [P.].
n. Yg.	Malabar.	Col. Beddome [P.].
o. Many spec.: ♂, ♀, hgr., & yg.	Anamallays.	Col. Beddome [P.].

87. **Rana papua.**

Rana papua, *Lesson, Coquille*, ii. i. p. 59, pl. 7. f. 1.
Limnodytes waigiensis, *Dum. & Bibr.* p. 514.
Hylorana dæmeli, *Steind. Sitzb. Ac. Wien*, 1868, p. 532, c. tab.
Limnodytes papuensis, *Meyer, Mon. Berl. Ac.* 1874, p. 52; *Doria, Ann. Mus. Civ. Gen.* vi. 1874, p. 356.
Hylarana nebulosa, *Macleay, Proc. Linn. Soc. N. S. W.* 1877, ii. p. 135.
Limnodytes papua, *Peters & Doria, Ann. Mus. Civ. Gen.* xiii. 1878, p. 418.

Very closely allied to *Rana temporalis*. Snout rather longer and more pointed; interorbital space rather narrower. Legs variable in length. Greyish above; an indistinct temporal spot; tympanum generally reddish brown; hinder side of thighs black- and white-marbled. Male with two internal vocal sacs, without humeral glands.

N. Australia; New Guinea.

a–b. ♀.	Cape York.	Herr Dämel [C.].
c. ♀.	Cape York.	
d. ♂.	Port Moresby.	Rev. W. T. Turner [C.].
e–f. ♂.	New Guinea.	
g. ♀.	Murray Island.	Rev. S. Macfarlane [C.].

88. **Rana krefftii.** (Plate III. fig. 2.)

Hylarana erythræa, part., *Günth. Cat.* p. 73.

Vomerine teeth in two oval oblique groups between the choanæ.

Head moderate, depressed; snout a little shorter than in *R. erythræa*, subacuminate; loreal region concave; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds the size of the eye. Fingers and toes as in *R. erythræa*; a very distinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation extends slightly beyond the eye. A broad, scarcely prominent glandular lateral fold; another fold from beneath the eye to the shoulder. Chestnut-brown above, sides of head and body much darker; glandular fold not lighter than the back; hind limbs not cross-barred; the entire lower surfaces with large chestnut-brown marblings. Male with two external subgular vocal sacs. Size of *R. erythræa*.

Solomon Islands.

a. ♀.	San Christoval.	Museum of Economic Geology.
b. ♂.	Solomon Islands.	G. Krefft, Esq. [P.].

89. **Rana tytleri.**

Hylorana tytleri, *Theobald, Cat. Rept. As. Soc. Mus.* p. 84; *Stoliczka, Journ. As. Soc.* 1870, p. 148, pl. 9. f. 1.

Seems to be distinct from *R. erythræa*. Two distinct metatarsal tubercles, the inner one very prominent and large. Legs transversely barred with brown.

Birmah; Bengal.

90. **Rana erythræa.**

Hylarana erythræa, *Günth. Cat.* p. 73.

Hyla erythræa, *Schleg. Abbild.* pl. 9. f. 3.

Hylarana erythræa, *Tschudi, Batr.* p. 78; *Günth. Rept. Brit. Ind.* p. 425; *Stoliczka, Proc. As. Soc.* 1872, p. 104; *Anders. Anat. Zool. Res. Yunnan*, p. 846.

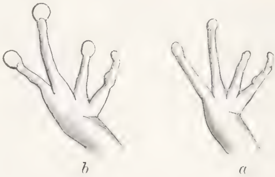
Limnodytes erythræus, *Dum. & Bibr.* p. 511, pl. 88. f. 1; *Cantor, Mal. Rept.* p. 141.

Hylorana subcærulea, *Cope, Proc. Ac. Philad.* 1868, p. 139.

Vomerine teeth in two oval oblique groups between the choanæ. Head moderate, depressed; snout rather long, subacuminate; loreal region concave; interorbital space as broad as the upper eyelid; tympanum very distinct, nearly as large as the eye. Fingers rather slender, first not extending beyond second; toes moderate, nearly entirely webbed; tips of fingers and toes dilated into small but very distinct disks; subarticular tubercles moderate; inner metatarsal tubercle small, oval; outer tubercle none or indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. A rather broad and prominent glandular lateral fold; another fold from beneath the eye to the shoulder, followed by a strong glandule. Brown or olive above; upper lip and glandular folds white; hind limbs dark-speckled or longitudinally striped; beneath immaculate.

E. Indian Archipelago; Malayan Peninsula

a–b. ♀.	Sumatra.	Leyden Museum.
c–d. ♀.	Borneo.	L. L. Dillwyn, Esq. [P.].
e, f–g. ♀ & yg.	Philippines.	
h–i. Yg.	Pinang.	Dr. Cantor [C.].
k–m. Yg.	Siam.	M. Mouhot [C.].
n. Yg.	E. Indies.	



a. Rana erythræa. Upper surface of hand.
b. —— chalconota. do.

91. Rana chalconota.

Hylarana chalconota, *Günth. Cat.* p. 73.
Hyla chalconota, *Schleg. Abbild.* pl. 9. f. 1.
Polypedates chalconotus, *Tschudi, Batr.* p. 76.
Limnodytes chalconotus, *Dum. & Bibr.* p. 513.

Very closely allied to *Rana erythræa.* Skin of the back more or less glandular; disks of fingers, especially third and fourth, much larger, half the size of the tympanum; glandular folds of the same colour as the back.

Java; Borneo.

a. ♀.	Java.	Leyden Museum.
b. Hgr.	Java.	Dr. Bleeker.
c. ♀.	Matang.	

92. Rana arfaki.

Rana arfaki, *Meyer, Mon. Berl. Ac.* 1874, p. 138.
Limnodytes arfaki, *Peters & Doria, Ann. Mus. Civ. Gen.* 1878, p. 418, pl. 6. f. 1.

Vomerine teeth in two small groups behind the level of the hinder edge of the choanæ. Head moderate; snout rounded; interorbital space broader than the upper eyelid; tympanum distinct, two thirds the size of the eye. Fingers moderate; toes moderate, entirely webbed; tips of fingers and toes dilated into well-developed disks; a small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the snout. A narrow glandular lateral fold, indistinct in old specimens. Blackish brown above, with reddish-white spots, arranged into indistinct cross bands on the limbs.

New Guinea.

93. Rana jerboa.

Hylorana jerboa, *Günth. Proc. Zool. Soc.* 1872, p. 599, pl. 40.

Vomerine teeth in two oblique groups between the choanæ. Head moderate; snout rather short, rounded; loreal region deeply concave; interorbital space as broad as the upper eyelid; tympanum very distinct, half the size of the eye. Fingers rather slender, first extending slightly beyond second; toes moderate, entirely webbed; disks of fingers and toes much developed; subarticular tubercles well developed; inner metatarsal tubercle small, oval; outer tubercle small or none. Hind limb extremely long, the femoro-tibial articulation reaching the tympanum. A moderately prominent glandular lateral fold. Brown above; sides of head and body darker; limbs transversely barred; yellowish beneath, more or less spotted with brown on the throat and breast.

Borneo.

a, b. ♀.	Matang.	(Types.)

94. Rana inguinalis. (Plate III. fig. 3.)

Rana inguinalis, *Günth. Ann. & Mag. Nat. Hist.* 1877, p. 316.

Vomerine teeth in two small oblique series extending beyond the hinder edge of the choanæ. Head moderate; snout pointed, with distinct canthus rostralis; interorbital space a little narrower than the upper eyelid; tympanum distinct, two thirds the width of the eye. Fingers rather slender, first extending beyond second; toes moderate, nearly entirely webbed; tips of fingers and toes slightly dilated; subarticular tubercles moderate; a single, very small, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches a good deal beyond the tip of the snout. Skin smooth above; a strong fold above the tympanum; belly slightly granular. Brownish grey above, with subsymmetrical darker spots; a subtriangular spot between the eyes; a black band below the canthus rostralis and on the temporal region; a small black spot on the inguinal region; limbs cross-barred; beneath immaculate.

Madagascar.

a. Hgr.	Anzahamaru.	(Type.)

95. Rana madagascariensis.

? Hylarana madagascariensis, *Günth. Cat.* p. 73.
? Limnodytes madagascariensis, *A. Dum. Ann. Sc. Nat.* (3) xix. p. 157.

Vomerine teeth in two nearly straight transverse groups behind the level of the hinder edge of the choanæ. Head depressed; snout blunt, with distinct canthus rostralis and concave loreal region; interorbital space as broad as the upper eyelid; tympanum two thirds the width of the eye. Fingers rather slender, first not extending as far as second; toes moderate, nearly entirely webbed; tips of fingers and toes dilated into small disks; subarticular tubercles rather small; a single, small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth, glandular on the flanks and round the vent. Dark brown above; a black temporal spot; whitish beneath, clouded with grey; lower surface of limbs grey, white-spotted.

Madagascar.

a. ♀. Madagascar.

96. Rana granulata.

Limnodytes granulatus, *Boettg. Zool. Anz.* 1881, p. 361.

Vomerine teeth in two suborbicular groups behind the level of the choanæ. Snout rather acute; canthus rostralis distinct; loreal region very concave; tympanum distinct, more than half the size of the eye. Fingers slender, first longer than second; toes more than two thirds webbed; tips of fingers and toes dilated into rather large disks; subarticular tubercles very prominent; a single metatarsal tubercle. The hind limb being carried forwards along the body, the heel reaches beyond the tip of the snout. Upper surfaces granulate; a fold from the eye to the shoulder; another very narrow one along each side of the back; belly glandulose. Brownish above, sides blackish; a W-shaped dark mark on the front of the back; limbs cross-barred; beneath black marbled and spotted, except on the belly.

Nossi Bé, Madagascar.

97. Rana luctuosa.

Limnodytes luctuosus, *Peters, Mon. Berl. Ac.* 1871, p. 579, *and Ann. Mus. Civ. Genov.* 1872, p. 43, pl. 6. f. 1.

Vomerine teeth in two small oblique groups on a level with the hinder edge of the choanæ. Head moderate; snout short, rounded, without canthus rostralis; interorbital space broader than the upper eyelid; tympanum distinct, not quite two thirds the size of the eye. Fingers rather short, first extending beyond second; toes moderate, hardly half webbed; tips of fingers slightly, of toes distinctly dilated; subarticular tubercles moderate; a single, small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin quite smooth; no glandular lateral fold. Dark brown above, the sides nearly black, the limbs speckled and striped across with whitish; a narrow whitish line on each side, from the tip of the snout along the canthus rostralis, the outer edge of the upper eyelid, and the side of the back to the vent; brown beneath, more or less speckled with whitish.

Borneo.

a–b, c–f. ♀, hgr., & yg. Matang.

98. Rana chloronota.

?Polypedates smaragdinus, *Blyth, Journ. As. Soc.* xxi. p. 355.
Polypedates smaragdinus, *Jerdon, Proc. As. Soc.* 1870, p. 83; *Anders. Proc. Zool. Soc.* 1871, p. 208.
—— chloronotus, *Günth. Proc. Zool. Soc.* 1875, p. 569, pl. 65. f. A.

Vomerine teeth in two oblique series, commencing on a level with the hinder edge of the choanæ. Head moderate: snout short, rounded; loreal region vertical, concave; interorbital space as broad as the upper eyelid; tympanum distinct, about half the width of the eye. Fingers moderate, depressed, first extending slightly beyond second; toes moderate, broadly webbed; tips of fingers and toes dilated into large disks, that of the third finger as large as the tympanum; subarticular tubercles large; a single, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth; a glandular fold from beneath the eye to the shoulder, followed by a glandule. Upper surface of the head and back green, generally with a few black spots; sides of head, body, and limbs dark brown, the latter barred across with blackish; glandular fold on the lip white; loins and hind part of the thighs marbled with whitish; beneath white or yellowish, the throat generally brown-speckled. Male with two external vocal vesicles below the angles of the mouth.

Himalayas.

a. Many spec., ♂ ♀.	Darjeeling.	T. C. Jerdon [P.]. (Types of *Polypedates chloronotus.*)

99. Rana afghana.

Polypedates afghana, *Günth. Cat.* p. 81.
Polypedates marmoratus, *Blyth, Journ. As. Soc.* 1856, p. 188; *Anderson, Proc. Zool. Soc.* 1871, p. 209, *and Anat. Zool. Res. Yunnan*, p. 842; *Stoliczka, Proc. As. Soc.* 1872, p. 108.
—— afghana, *Günth. Rept. Brit. Ind.* p. 432.
Amolops afghanus, *Cope, Nat. Hist. Rev.* 1865, p. 117.

Vomerine teeth in two straight or slightly oblique series behind the choanæ. Head moderate; snout short, rounded; canthus rostralis rounded; loreal region concave; interorbital space as broad as the upper eyelid; tympanum not very distinct, hardly one third the width of the eye. Fingers depressed, first not extending quite so far as second; toes moderate, entirely webbed; tips of fingers and toes dilated into very large disks, those of the third and fourth fingers at least twice as large as the tympanum; subarticular tubercles large; inner metatarsal tubercle elongate, scarcely prominent; a very indistinct outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth above, or covered with small rounded glandules, larger on the sides of the body; a fold above the tympanum; belly granular. Above brown, variegated with greyish or grey, spotted with darker; beneath yellowish, immaculate or marbled with brown. Male with two internal vocal sacs.

The tadpole resembles that of *R. alticola* in having parotoid glands. The spiraculum is lateral, below the middle of the left parotoid. The tail is pointed and about twice as long as head and body. Uniform dark brown.

Afghanistan; Himalayas.

a. ♀.	Afghanistan.	Dr. Griffith [P.]. (Types of *Polypedates afghana.*)
b, c. Many larvæ.	Afghanistan.	East-India Company [P.].
d. Many spec.: ♂, ♀, hgr., & yg.	Darjeeling.	T. C. Jerdon, Esq. [P.].
e, f–h. ♀ & yg.	Darjeeling.	W. T. Blanford, Esq. [P.].

100. Rana formosa.

Polypedates formosus, *Günth. Proc. Zool. Soc.* 1875, p. 573, pl. 65. f. B.

This species is very closely allied to, and perhaps not different from, *Rana afghana*. The principal difference resides in the greater length of the fingers, that of the third equalling the distance between the tympanum and the tip of the snout. Greenish or greyish above, with rounded dark spots; legs distinctly cross-barred.

Himalayas.

a. ♀.	Khassya.	T. C. Jerdon, Esq. [P]. (Type.)
b, c–d. ♂ ♀.	Darjeeling.	W. T. Blanford, Esq. [P.].

101. Rana celebensis.

Limnodytes celebensis (*Schleg.*), *Peters, Mon. Berl. Ac.* 1872, p. 582.

Vomerine teeth in two oblique groups between the choanæ. Head moderate, depressed; snout subacuminate; loreal region concave; interorbital space as broad as the upper eyelid; tympanum very distinct, nearly as large as the eye, close to it. Fingers moderate, first not extending beyond second; toes moderate, nearly entirely webbed; tips of fingers and toes dilated into well-developed disks; subarticular tubercles well developed; inner metatarsal tubercle small, oval; a very distinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. A very broad and very prominent glandular lateral fold; below it several very prominent oval glands; a glandular fold from beneath the eye to the shoulder, followed by a strong glandule. Chestnut-brown above, sides of head and body rather darker; glandular fold not lighter; legs cross-barred; hinder side of thighs brown-and-white marbled; whitish beneath, throat and chest closely speckled with brown. Male with two internal vocal sacs and an oval flat gland at the base of the arm.

Celebes.

a. ♂. —— ?

102. **Rana natatrix.**

Ixalus natator, *Günth. Cat.* p. 75, pl. iv. f. C.
—— guttatus, *Günth. l. c.* p. 76, pl. iv. f. D.
Staurois natator, *Cope, Nat. Hist. Rev.* 1865, p. 117.
—— guttatus, *Cope, l. c.*
Polypedates guttatus, *Günth. Proc. Zool. Soc.* 1873, p. 600.

Vomerine teeth in two small oblique groups between the choanæ, frequently missing. Head much elongate; snout long, rounded, with angular canthus rostralis and deeply concave loreal region; interorbital space narrower than the upper eyelid; tympanum distinct, about one third the width of the eye. Fingers slender, first shorter than second, with very large disks; toes very broadly webbed, with moderate disks; subarticular tubercles rather small. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper surfaces more or less distinctly granular; lower surfaces smooth. Above brown, black-spotted, or dark ashy brown, uniform or with rounded whitish spots. Male with two internal vocal sacs.

Philippines; Borneo.

a, b–c. ♂.	Philippines.	(Types of *Ixalus natator*.)
d. ♂.	Dinagat Island.	Mr. Everett [C.].
e. ♂.	Borneo.	(Type of *Ixalus guttatus*.)
f. ♀.	Borneo.	
g. ♀.	Matang.	

103. **Rana signata.**

Polypedates signata, *Günth. Proc. Zool. Soc.* 1872, p. 600, pl. 40. f. C.

Vomerine teeth in two small oval groups on a level with the hinder edge of the choanæ. Head moderate; snout subacuminate, with distinct canthus rostralis; interorbital space as broad as the upper eyelid; tympanum two thirds the width of the eye. Fingers slender, first extending a little beyond second; toes moderate, two-thirds webbed; tips of fingers and toes swollen; subarticular tubercles well developed; a small oval inner metatarsal tubercle, and a small rounded one at the base of the fourth toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin of the upper parts granular. Blackish above; a whitish line along the upper margin of the snout and eyelid, and along each side of the back; hind limbs black and light-brown cross-barred.

Borneo.

a. Hgr. (?).	Matang.	(Type.)

104. Rana similis.

Polypedates similis, *Günth. Proc. Zool. Soc.* 1873, p. 171.

Has been distinguished on account of its smoother skin, and a distinct white labial band. These characters are in my opinion not sufficient to separate this form from *R. signata*, with which it agrees in every other point.

Philippines.

a. Hgr. (?).	Laguna del Bay.	Dr. A. B. Meyer [C.]. (Type.)

105. Rana everetti. (Plate VI.)

Vomerine teeth in two small oblique series, commencing on a level with the hinder edge of the choanæ. Head depressed; snout rounded, with distinct canthus rostralis and concave loreal region; interorbital space as broad as the upper eyelid; tympanum three fourths the width of the eye. Fingers slender, first not extending as far as second; toes moderate, entirely webbed; tips of fingers and toes dilated into disks, those of the former large, measuring about two thirds the width of the tympanum, those of the latter smaller; subarticular tubercles well developed; a small oval inner, and an indistinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth; a rather indistinct glandular fold above the tympanum; angles of the mouth glandular. Light greyish brown above, with round dark spots; limbs indistinctly cross-barred; under surface of hind limbs speckled with greyish brown.

Philippines.

a. ♀.	Zamboanga.	Mr. Everett [C.].

106. Rana mackloti.

Hyla mackloti, *Schleg. Nomencl. Rept. Mus. Zool. Berol.* 1856, p. 37.
Polypedates mackloti, *Peters, Mon. Berl. Ac.* 1871, p. 650.

Vomerine teeth in two converging series commencing from the inner front corner of the choanæ. Head depressed; snout short shorter than the diameter of the eye; tympanum one third the width of the eye. First finger short; toes entirely webbed; tips of fingers and toes dilated into large disks. Back with scattered small tubercles; belly granular. Yellowish brown above; back and hinder side of thighs marbled with darker; a light cross band between the eyes; limbs dark cross-barred.

Java.

107. **Rana buergeri.**

Polypedates bürgeri, *Günth. Cat.* p. 80.
Hyla bürgeri, *Schleg. Faun. Japon.* p. 113, pl. 3. f. 7–8.
Bürgeria subversicolor, *Tschudi, Batr.* p. 75.
Polypedates bürgeri, *Dum. & Bibr.* p. 521.

Vomerine teeth in a straight line on a level with the front edge of the choanæ. Head moderate; snout truncate; tympanum half the width of the eye. First finger shorter than second; toes entirely webbed; tips of fingers and toes dilated into large disks. Upper surfaces very warty; a fold above the tympanum; belly and lower surface of thighs granulate. Upper surfaces brown, marbled with black; a large triangular spot between the eyes.

Japan.

108. **Rana glandulosa.** (Plate VII.)

Vomerine teeth in two oblique groups on a level with the hinder edge of the choanæ. Head rather large; snout rounded, with rounded canthus rostralis and concave loreal region; eyes very large; interorbital space slightly narrower than the upper eyelid; tympanum three fifths the width of the eye. Fingers moderate, first extending beyond second; toes moderate, two-thirds webbed; tips of fingers and toes swollen; subarticular tubercles very prominent; a small oval inner metatarsal tubercle, and a small rounded one at the base of the fourth toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Back with large flat glandules, more conspicuous on the sides; no glandular lateral fold. Dark olive-brown above, reddish brown beneath. Male with an external vocal sac on each side of the throat, and a large oval gland on the inner side of the arm.

Borneo.

a. ♂.	Sarawak.	Mr. Everett [C.].

3. RHACOPHORUS*.

Rhacophorus, *Kuhl, Isis,* 1827, p. 294; *Dum. & Bibr.* viii. p. 530; *Günth. Cat.* p. 82; *Cope, Nat. Hist. Rev.* 1865, p. 116.

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[*] 1. *Polypedates junghuhnii,* Bleeker, Naturk. Tijdschr. Nederl. Ind. xi. p. 469.—Java.

2. *Polypedates lividus,* Blyth, Journ. As. Soc. xxiv. p. 718.—Tenasserim.

3. *Polypedates stellata,* Kelaart, Prodr. Faun. Zeyl. i. p. 194.—Ceylon.

Polypedates, *Tschudi, Batr.* p. 34; *Dum. & Bibr.* p. 515; *Günth. Cat.* p. 77; *Cope, l. c.*
Boophis, *Tschudi, l. c.* p. 36.
Bürgeria, *Tschudi, l. c.* p. 75.
Hypsiboas, sp., *Wagler, Syst. Amph.* p. 200.

Pupil horizontal. Tongue free and deeply notched behind. Vomerine teeth. Tympanum generally distinct. Fingers and toes more or less webbed, the tips dilated into regular disks. Outer metatarsals separated by web. Omosternum and sternum with a bony style. Terminal phalanges generally bifurcate, sometimes obtuse.

East Indies; Japan; Madagascar.

The recent discovery of several remarkable forms has much affected the old division of the species into two genera, *Polypedates* and *Rhacophorus*, which was based on the development of the interdigital web. Without further entering upon this question, I may observe that two species which differ much in the extent of the web between the fingers, viz. *Polypedates schlegelii* and *Rhacophorus maximus*, resemble each other so much in all other respects that they must be considered closely allied forms. As to the arrangement proposed by Mr. Cope, viz. to place the species with undivided terminal phalanges in the genus *Ixalus*, I think that such a division would be very unnatural, as it would lead us to separate generically *R. microtympanum* from *R. pleurostictus*.

Synopsis of the Species.

I. Fingers not more than half webbed.

A. Heel without dermal appendage.

1. Vomerine teeth extending backwards beyond the level of the hinder edge of the choanæ.

Vomerine teeth in a straight line; fingers nearly one-third webbed; tympanum at least two thirds the size of the eye ...... 1. *goudoti*, p. 76.
Vomerine teeth in two oblique groups; fingers very slightly webbed; disks as large as tympanum .... 3. *crossleyi*, p. 77.
Tympanum half the size of the eye; disks as large as tympanum .... 2. *dispar*, p. 77.

2. Vomerine teeth between the choanæ.

a. Fingers not more than one-third webbed.

α. Tympanum hidden .... 8. *surdus*, p. 79.

β. Tympanum distinct, more than half the width of the eye.

A glandular lateral fold.................. 6. *hecticus*, p. 78.

Belly quite smooth	4. *lugubris*, p. 77.
Belly granular; nostril equally distant from the eye and the tip of the snout; tibio-tarsal articulation reaching the eye	17. *davidi*, p. 83.
Belly granular; nostril much nearer the tip of the snout than the eye; tibio-tarsal articulation reaching the tip of the snout	18. *maculatus*, p. 83.

γ. Tympanum distinct, not more than half the width of the eye.

* Nostril equally distant from the eye and the tip of the snout.

Fingers scarcely webbed; hinder side of thighs coloured	9. *microtympanum*, [p. 79.
Fingers very distinctly webbed; hinder side of thighs not coloured	12. *jerdonii*, p. 80.
Fingers very distinctly webbed; hinder side of thighs brown, speckled with white	10. *pleurostictus*, [p. 79.
Tongue with a conical papilla	13. *dubius*, p. 81.

** Nostril nearer the tip of the snout than the eye.

Belly with very large glandules	5. *tephrœomystax*, [p. 78.
Tympanum half the width of the eye; tongue with a conical papilla	11. *reticulatus*, p. 80.
Tympanum one third the width of the eye; tongue with a conical papilla	14. *nanus*, p. 81.
Tympanum one third the width of the eye; tongue without papilla	7. *stictomerus*, [p. 78.
Underside of tarsus tubercular	15. *fergusonii*, p. 82.
Outer edge of forearm and tarsus with a denticulate fringe	16. *cavirostris*, p. 82.

b. Fingers half webbed, or nearly so.

Tibio-tarsal articulation reaching hardly the eye	23. *schlegelii*, p. 86.
Tibio-tarsal articulation reaching in front of the eye	24. *microglossus*, [p. 87.

B. Heel with a dermal appendage.

Fingers very slightly webbed; snout not twice as long as the diameter of the eye	19. *eques*, p. 85.
Fingers very slightly webbed; snout twice as long as the diameter of the eye	20. *nasutus*, p. 85.
Fingers one-third webbed; canthus rostralis rounded	21. *appendiculatus*, [p. 86.

II. Fingers two-thirds webbed .... 25. *dennysii*, p. 87.

III. Fingers entirely webbed.

A. Vomerine teeth in two widely-separated small round groups close to the choanæ.

No dermal appendages .... 22. *tuberculatus*, [p. 86.

B. Vomerine teeth in two series on a level with the front edges of the choanæ.

1. No dermal appendages.

Purple or bluish green above, immaculate .. 26. *maximus*, p. 88.

2. Heel with a dermal appendage.

Large black spots between the fingers and toes and behind the arm .... 27. *reinwardtii*, [p. 88.
No spots at all .... 28. *malabaricus*, [p. 90.
One or two black spots behind the arm, none between the fingers and toes .... 29. *bimaculatus*, [p. 90.
Hind limbs cross-barred .... 30. *pardalis*, p. 91.

C. Vomerine teeth in two series behind the level of the choanæ.

A large triangular dermal appendage on the elbow and on the heel .... 31. *madagascarien*-[*sis*, p. 91.

1. Rhacophorus goudoti.

Polypedates goudoti, *Günth. Cat.* p. 82.
Boophis goudoti, *Tschudi, Batr.* p. 77.
Polypedates goudoti, *Dum. & Bibr.* p. 517; *Steind. Verh. zool.-bot. Ges. Wien*, 1864, p. 253, pl. 10. f. 1.

Vomerine teeth in a straight line behind the level of the choanæ. Snout rounded; canthus rostralis distinct; loreal region slightly concave; nostril nearer the eye than the tip of the snout; interorbital space a little broader than the upper eyelid; tympanum two thirds or three fourths the size of the eye. Fingers nearly one-third webbed; toes nearly entirely webbed; disks of fingers and toes moderate, about half the diameter of the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches the tip of the snout, or nearly so far. Smooth above, granular beneath; a strong fold above the tympanum. Brown above, sometimes with large round light spots. Male with an internal vocal sac.

Madagascar.

a. ♀.	Madagascar.	Rev. — Ellis [P.].
b–c. ♂ & hgr.	——?	
d. ♀.	——?	

2. Rhacophorus dispar.

Polypedates dispar, *Boettg. Ber. Senckenb. Ges.* 1878–79, p. 86, *and Abhandl. Senckenb. Ges.* xi. 1879, p. 32.

Vomerine teeth in two groups behind the level of the hinder edge of the choanæ. Snout as in *R. maculatus*; canthus rostralis moderate; loreal region slightly concave; tympanum about half the size of the eye. Fingers slightly but distinctly webbed; toes entirely webbed; disks moderate, much smaller than the tympanum; a small, prominent, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth above, with numerous small warts on the middle of the back and along the limbs in the male; granular beneath; a fold above the tympanum. Greyish or brown above, variously spotted or dotted with blackish; canthus rostralis blackish; male with two whitish lines along each side of the back; limbs cross-barred.

Nossi Bé, Madagascar.

3. Rhacophorus crossleyi.

Polypedates crossleyi, *Peters, Mon. Berl. Ac.* 1874, p. 618.

Vomerine teeth in two oblique groups beginning on a level with the hinder edge of the choanæ. Snout rounded; canthus rostralis distinct; loreal region very slightly concave; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum half the width of the eye. Fingers very slightly webbed; toes nearly entirely webbed; disks of fingers and toes well developed, as large as the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or slightly beyond. Skin smooth, granular on the belly and under the thighs; a strong fold above the tympanum. Light greyish brown above, with black specks; loreal and temporal regions darker; limbs rather indistinctly cross-barred. Male with an internal vocal sac.

Madagascar.

a–b. ♂ ♀.	Madagascar.
c. Hgr.	Anzahamaru.

4. Rhacophorus? lugubris.

Polypedates lugubris, *A. Dum. Ann. Sc. Nat.* (3) xix. p. 157.

Vomerine teeth in two oblique series between the choanæ. Nostril near the tip of the snout; tympanum nearly as large as the eye. Belly quite smooth. Blackish brown above, slightly speckled with white; belly whitish, mottled with black.

Madagascar.

5. Rhacophorus ? tephræomystax.

Polypedates tephræomystax, *A. Dum. Ann. Sc. Nat.* (3) xix. p. 158.

Vomerine teeth in two oblique series between the choanæ. Snout short, rounded; nostril a little nearer the tip of the snout than the eye; tympanum much smaller than the eye. Belly covered with very large glandules. Yellowish grey above, more or less spotted with black; limbs cross-barred.

Madagascar.

6. Rhacophorus hecticus.

Polypedates hecticus, *Peters, Mon. Berl. Ac.* 1863, p. 457.

Vomerine teeth in two oblique series between the choanæ. Snout rounded; canthus rostralis distinct; loreal region concave; nostril nearer the tip of the snout than the eye; tympanum two thirds the width of the eye. Fingers slightly, toes nearly entirely webbed; disks of fingers very large, heart-shaped, of toes much smaller; subarticular tubercles moderate; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin tubercular above, smooth beneath; a narrow glandular fold along each side of the back; another from the angle of the mouth below the tympanum to the axilla. Greyish blue above; glandular folds white, black-edged; upper lip white. Male without vocal sac.

Samar Island.

7. Rhacophorus stictomerus.

Ixalus stictomerus, *Günth. Proc. Zool. Soc.* 1875, p. 575, pl. 66. f. C.

Vomerine teeth in two small groups close to the inner edges of the choanæ. Snout rather pointed; canthus rostralis distinct; loreal region nearly flat; nostril nearer the tip of the snout than the eye; interorbital space scarcely broader than the upper eyelid; tympanum one third the width of the eye. Fingers slightly, toes two-thirds webbed; disks and subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth, granular on the belly and under the thighs; a fold above the tympanum. Light brown above, with indistinct symmetrical markings; loreal region dark brown; a black temporal streak; limbs indistinctly cross-barred; front and hinder side of thighs minutely speckled with blackish; beneath immaculate.

Ceylon.

a. Hgr. (?).	Ceylon.	Col. Beddome [P.]. (Type.)

8. Rhacophorus surdus.

Polypedates surdus, *Peters, Mon. Berl. Ac.* 1863, p. 459.

Vomerine teeth in two short oblique series between the choanæ. Snout rounded; canthus rostralis distinct; loreal region concave; nostril nearer the tip of the snout than the eye; tympanum entirely hidden. Fingers slightly, toes a little more than half webbed; disks of fingers moderate, of toes rather large; two slightly developed metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin with a few very small tubercles above, granular beneath. Dark brown above; a greenish-white stripe from the eye to the axilla: sides of the body brown-marbled on whitish ground; limbs cross-barred; hinder side of thighs marbled with brown; brown beneath, the throat speckled with white.

Luzon.

9. Rhacophorus microtympanum.

Polypedates microtympanum, *Günth. Cat.* p. 77, pl. vi. f. A.
Polypedates microtympanum, *Günth. Rept. Brit. Ind.* p. 430.

Vomerine teeth in two small oblique groups between the choanæ. Snout short, rounded; canthus rostralis distinct; loreal region slightly concave; nostril nearly halfway between the eye and the tip of the snout; interorbital space broader than the upper eyelid; tympanum not half the width of the eye. Fingers slightly, toes half webbed; disks of fingers and toes well developed, as large as the tympanum: subarticular tubercles well developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, or with small warts; a narrow fold above the tympanum; beneath granular. Grey or brownish above, blackish spotted; generally a cross band between the eyes and a curved stripe on each side of the back; limbs cross-barred. Male with an internal vocal sac.

Ceylon.

a, b, c, d–e, f–i. ♂, ♀, & yg.	Ceylon.	(Types.)
k, l, m–n. ♂, ♀, hgr., & yg.	Ceylon.	
o. Hgr.	Ceylon.	Dr. Kelaart [P.].
p. Several spec., ♀ & yg.	Ceylon.	G. H. K. Thwaites, Esq. [P.].
q–r. Yg.	Newera Ellia.	Dr. A. Günther [P.].
s. ♀.	S. Ceylon.	

10. Rhacophorus pleurostictus.

Polypedates pleurostictus, *Günth. Rept. Brit. Ind.* p. 430, pl. 26. f. I.

Resembles very much *R. microtympanum.* Fingers rather longer (with bifurcate terminal phalanges) and more distinctly webbed. Greenish or greyish above, with or without dark insuliform spots; limbs cross-barred; flanks and hinder side of thighs brown, the former marbled, the latter speckled with white.

India.

a. ♀.	Madras.	Zool. Soc.	Types.
b–c. ♀ & hgr.	Madras.	T. C. Jerdon, Esq. [P.].	
d. ♀.	Ootocamund.	F. Day E,sq. [P.].	
e. Many spec.: ♀, hgr., & yg.	Malabar.	Col. Beddome [P.].	
f–g. Hgr.	Anamallays.	Col. Beddome [P.].	
h–m. ♀, hgr., & yg.	Nilgherries.	T. C. Jerdon, Esq. [P.].	

11. Rhacophorus reticulatus.

Polypedates reticulatus, *Günth. Rept. Brit. Ind.* p. 431, pl. 26. f. F, *and Ann. & Mag. N. H.* xvii. 1876, p. 376, pl. 20. f. C.

Vomerine teeth in two oblique groups between the choanæ. A conical papilla on the middle of the tongue. Snout rounded; canthus rostralis distinct; loreal region slightly concave; nostril much nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum half the width of the eye. Fingers very slightly, toes nearly entirely webbed; disks of fingers and toes as large as the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or slightly beyond. Skin smooth above, granular beneath; a narrow fold above the tympanum. Brown above, with small darker spots; a more or less distinct dark cross band between the eyes; flanks and hinder side of thighs with a network of dark-brown lines; legs indistinctly cross-barred; throat brown-spotted.

Ceylon.

a. ♀.	Ceylon.	(Type.)
b–c. ♀ & eggs.	Ceylon.	W. Ferguson, Esq. [P.].
d–e, f. Hgr.	Ceylon.	
g. ♀.	C. Ceylon.	G. H. K. Thwaites, Esq. [P.].

12. Rhacophorus jerdonii. (Plate VIII. fig. 1.)

Polypedates jerdonii, *Günth. Proc. Zool. Soc.* 1875, p. 571.

Vomerine teeth in two small groups between the choanæ. Snout rounded; canthus rostralis rounded; loreal region very slightly concave; nostril equally distant from the tip of the snout and the eye; interorbital space broader than the upper eyelid; tympanum one third the width of the eye. Fingers distinctly webbed; toes two-thirds webbed; disks larger than the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the belly and under the thighs; a fold above the tympanum. Greyish above, forehead and sides of the body lighter; legs irregularly cross-barred; hinder side of thighs colourless; throat brown-spotted. Male with an internal vocal sac.

Darjeeling.

a–b. ♂ ♀.	Darjeeling.	T. C. Jerdon, Esq. [P.].	(Types.)

13. **Rhacophorus dubius.** (Plate VIII. fig. 2.)

Ixalus jerdonii, *Günth. Proc. Zool. Soc.* 1875, p. 575.

Vomerine teeth ——? Tongue with a free conical papilla in the middle. Snout rounded; canthus rostralis distinct; loreal region slightly concave; nostril equally distant from the eye and the tip of the snout; interorbital space broader than the upper eyelid; tympanum one third the width of the eye. Fingers slightly, toes two-thirds webbed; disks of fingers as large as the tympanum, of toes rather smaller; subarticular tubercles well developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above, granular beneath; a fold from the eye to the shoulder. Reddish brown above, with indistinct markings; thighs colourless in front and behind.

Though the single specimen exhibits no vomerine teeth, I am inclined to think that this is accidental, and that therefore this species must be referred to *Rhacophorus.*

Darjeeling.

a. ♀.	Darjeeling.	T. C. Jerdon, Esq. [P.].	(Type o *Ixalus jerdonii.*)

14. **Rhacophorus nanus.**

Polypedates nanus, *Günth. Proc. Zool. Soc.* 1868, p. 485, pl. 39. f. 3.
Ixalus macropus, *Günth. l. c.* p. 484, pl. 39. f. 4.

Vomerine teeth in two small groups between the choanæ. A conical papilla in the middle of the tongue. Snout rounded; canthus rostralis angular; loreal region slightly concave; nostril nearer the tip of the snout than the eye; interorbital space scarcely broader than the upper eyelid; tympanum one third the width of the eye. Fingers slightly webbed, toes half webbed in the young, generally nearly entirely in the adult; disks of fingers and toes as large as the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or somewhat beyond. Upper parts smooth or with small tubercles; a fold above the tympanum; belly and under surface of thighs granular. Brownish above, with symmetrical dark markings on the back; sometimes a light vertebral stripe; limbs cross-barred; beneath yellowish; throat sometimes brown-spotted. Male with an internal vocal sac.

Ceylon; (Ningpo?).

a. Several spec., ♂ & yg.	S. Ceylon.	(Types of *Polypedates nanus.*)
b–d. ♂ ♀.	Ceylon.	W. Ferguson, Esq. [P.].
e–i. ♂ ♀.	Ceylon.	G. H. K. Thwaites, Esq. [P.].
k. ♀ (vomerine teeth none).	Ceylon.	(Type of *Ixalus macropus.*)
l. ♀.	Ningpo (?).	

15. **Rhacophorus fergusonii.** (Plate VIII. fig. 3.)

Vomerine teeth in two very small groups close to the inner front edge of the choanæ. Snout subtriangular; canthus rostralis distinct; loreal region slightly concave; nostril nearer the tip of the snout than the eye; interorbital space a little broader than the upper eyelid; tympanum half the width of the eye. Fingers very slightly, toes nearly entirely webbed; disks nearly as large as the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches between the eye and the tip of the snout. Skin smooth, granular on the belly and under the thighs; a fold above the tympanum; lower surface of forearm and tarsus tubercular. Greyish above, indistinctly marbled with darker; limbs cross-barred; throat speckled with brown. From snout to vent 45 millim.

Ceylon.

a. ♀.	Ceylon.	W. Ferguson, Esq. [P.].

16. **Rhacophorus cavirostris.**

Polypedates cavirostris, *Günth. Proc. Zool. Soc.* 1868, p. 486, pl. 39. f. 1.

Ixalus fimbriatus, *Günth. Ann. & Mag. N. H.* 1872, ix. p. 87.

Vomerine teeth in two small groups between the choanæ. Snout rounded; canthus rostralis angular; loreal region deeply concave; nostril much nearer the tip of the snout than the eye; interorbital space as broad as, or broader than, the upper eyelid; tympanum nearly half the width of the eye. Fingers slightly, toes nearly entirely webbed; disks about two thirds the diameter of the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper parts with small tubercles; a fold above the tympanum; outer edge of forearm and of tarsus with a denticulate fringe; a patch of pointed tubercles below the vent; belly and underside of thighs granular. Reddish brown above, marbled with dark brown and speckled with black; limbs cross-barred; hinder side of thighs not coloured; throat speckled with brown. Male with an internal vocal sac.

Ceylon.

a. ♀.	S. Ceylon.	(Type of *Polypedates cavirostris.*)
b. Yg.	Ceylon.	G. H. K. Thwaites, Esq. [P.].
c. ♀.	Ceylon.	G. H. K. Thwaites, Esq. [P.]. (Type of *Ixalus fimbriatus.*)

17. Rhacophorus davidi.

Polypedates davidi, *Sauvage, Bull. Soc. Philom.* (7) i. 1877, p. 117.

Vomerine teeth in two short, slightly oblique series between the choanæ. Snout rounded; canthus rostralis moderate; nostril equally distant from the eye and the tip of the snout; tympanum rather more than half the width of the eye. Fingers slightly, toes more than half webbed; disks rather large. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth above, granular on the belly. Above slate-coloured, with large yellow spots; sides of body, inferior surface of limbs, throat and breast yellowish, with undulous slate-coloured line; belly with black punctulations.

Moupin, China.

18. Rhacophorus maculatus.

Polypedates maculatus, *Günth. Cat.* p. 78.
Hyla maculata, *Gray, Ind. Zool.*
—— leucomystax, *Gravenh. Delic.* p. 26.
Polypedates leucomystax, *Tschudi, Batr.* p. 75; *Dum. & Bibr.* p. 519; *Kelaart, Prodr. Faun. Zeyl.* p. 193.
Bürgeria maculata, *Tschudi, l. c.*
Polypedates rugosus, *Dum. & Bibr.* p. 520.
—— cruciger, *Blyth, in Kelaart, Prodr. App.* p. 48.
—— megacephalus, *Hallow. Proc. Ac. Philad.* 1860, p. 48.
—— maculatus, *Günth. Rept. Brit. Ind.* p. 428; *Blanford, Journ. As. Soc.* 1870, p. 376; *Anders. Proc. Zool. Soc.* 1871, p. 307; *Stoliczka, Proc. As. Soc.* 1872, p. 106.
—— biscutiger, *Peters, Mon. Berl. Ac.* 1871, p. 649.

Vomerine teeth in two more or less oblique series commencing on the inner front edge of the choanæ. Head generally bony and rugose above in adult specimens; snout subtriangular; canthus rostralis distinct; loreal region concave; nostril much nearer the tip of the snout than the eye; interorbital space much broader than the upper eyelid; tympanum nearly as large as the eye. Fingers slightly, toes nearly entirely webbed; disks of fingers and toes well developed, about half the diameter of the tympanum; subarticular tubercles moderate; a single, small, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth above, strongly granular on the belly and under the thighs; a narrow fold above the tympanum. Greyish or brown above, with or without brown spots and a large hourglass-shaped figure on the hinder part of the head and the front part of the back; legs cross-barred; hinder side of thighs brown, with round white spots. Male with an internal vocal sac.

S.E. Asia.

a, b–e. ♂, ♀, hgr., & yg.	China.	J. Reeves, Esq. [P.].
f, g. Hgr.	Hong Kong.	J. C. Bowring, Esq. [P.].
h. ♀.	Sikkim.	Messrs. v. Schlagintweit [C.].
i. Several spec.: ♂, ♀, & hgr.	Darjeeling.	T. C. Jerdon, Esq. [P.].
k. Hgr.	Nilgherries.	W. Theobald, Esq. [P.].
l. ♀.	Matheran.	Dr. Leith [P.].
m. Hgr.	Bombay.	Dr. Leith [P.].
n. ♀.	Malabar.	Dr. Günther [P.].
o, p. ♀.	Ceylon.	Dr. Kelaart.
q–r, s–t, u–w. ♂ ♀.	Ceylon.	
x–y. ♂ ♀ (with tadpoles and spawn of a species of frog).	Kandy, Ceylon.	Mr. Holdsworth [P.].
z–β. ♂ & hgr.	Salem, Madras Pres.	Col. Beddome [P.].
γ–δ. Hgr.	Madras.	T. C. Jerdon, Esq. [P.].
ε. ♀.	Ganjam.	F. Day, Esq. [P.].
ζ. ♀.	Siam.	J. C. Bowring, Esq. [P.].
η. ♀.	Siam.	M. Mouhot [C.].
θ. ♀.	Gamboja.	M. Mouhot [C.].
ι. ♀.	Cochin China.	Dr. Günther [P.].
κ. Hgr.	Tenasserim.	Dr. Parkman [P.].
λ–ν. ♀.	Borneo.	L. L. Dillwyn, Esq. [P.].
ξ–ο. ♀.	Manado.	Dr. A. B. Meyer [C.].
π. Adult skeleton.	Ceylon.	

Var. **quadrilineata.**

Polypedates quadrilineatus, *Günth. Cat.* p. 79.

Hyla quadrilineata, *Wiegm. Acta Ac. Cæs. Leop.-Carol.* 1835, p. 260, t. 22. f. 1.

Limnodytes celebensis, *Fitzing. Sitzb. Ac. Wien.* xlii. p. 413.

Polypedates quadrilineatus, *Günth. Rept. Brit. Ind.* p. 429; *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 253, pl. 10. f. 2; *Anders. Proc. Zool. Soc.* 1871, p. 207.

Above with four or six parallel longitudinal dark bands.

ρ–σ. ♂ ♀.	Singapore.	
τ–χ. ♀.	Java.	Leyden Museum.
ψ–bb, cc–dd. ♀ & hgr.	Philippines.	
ee. ♀.	Formosa.	M. Dickson, Esq. [P.].
ff–hh. ♀, hgr., & yg.	E. Indies.	

19. **Rhacophorus eques.**

Polypedates eques, *Günth. Cat.* p. 80, pl. vi. f. B.
Polypedates eques, *Günth. Rept. Brit. Ind.* p. 431.

Vomerine teeth in two oblique series commencing from the inner front edge of the choanæ. Snout triangular; canthus rostralis angular; loreal region concave; nostril much nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum about two thirds the width of the eye. Fingers very slightly, toes two-thirds webbed; disks of fingers nearly as large as the tympanum, of toes rather smaller; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper parts smooth; beneath granular; a narrow glandular fold from behind the eye to beyond the shoulder; another along the forearm and tarsus; tibiotarsal articulation with a cutaneous spur; vent surrounded by large tubercles. Greyish above, with a dark hourglass-shaped spot on the back, commencing between the eyes; legs cross-barred. Male with an internal vocal sac.

Ceylon.

a, b–f. ♂.	Ceylon.	(Types.)
g–h, i. ♀.	Ceylon.	Sir A. Smith [P.].
k. ♀.	Ceylon.	Dr. Kelaart.
l. ♀.	Ceylon.	Mr. Holdsworth [P.].

20. **Rhacophorus nasutus.**

Polypedates nasutus, *Günth. Proc. Zool. Soc.* 1868, p. 486, pl. 39. f. 2.

Very closely allied to *R. eques*. Snout much longer, equalling about twice the greatest diameter of the eye, its extremity projecting in a pointed cutaneous appendage. Otherwise exactly the same as *R. eques*. Brownish olive above; legs with dark cross-bands; two blackish lines along each side of the body, and another along the middle of the throat; lower lip black-margined.

Ceylon.

a. ♀.	S. Ceylon.	(Type.)
b. ♀.	Ceylon.	G. H. K. Thwaites, Esq. [P.].

21. **Rhacophorus appendiculatus.** (Plate VIII. fig. 4.)

Polypedates appendiculatus, *Günth. Cat.* p. 79.

Vomerine teeth in two oblique series commencing from the inner front edge of the choanæ. Snout subtriangular; canthus rostralis rounded; loreal region slightly concave; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum half the width of the eye. Fingers one third, toes nearly entirely webbed; disks well developed, about as large as the tympanum; subarticular tubercles very prominent, double under the third and fourth fingers; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth above, or with small warts, granular on the belly and under the thighs; cutaneous prominences beneath the vent and on the tibio-tarsal articulation; a cutaneous fringe along the inner edge of the tarsus and forearm. Greyish above; legs indistinctly cross-barred.

Philippine Islands.

a. Hgr.	Philippines.	(Type.)
b. Hgr.	Dinagat Island.	Mr. Everett [C.].

22. **Rhacophorus tuberculatus.**

Polypedates tuberculatus, *Anders. Journ. As. Soc.* 1871, p. 26.

Vomerine teeth in two widely separated small rounded groups close to the internal angle of the choanæ. Snout rounded and somewhat pointed; canthus rostralis indistinct; nostril near the tip of the snout; tympanum two thirds the size of the eye. Fingers broadly webbed, the membrane between the three outer reaching the disks; toes incompletely webbed; disks large; a small oblong inner metatarsal tubercle. Skin smooth; belly and underside of thighs granular, the granules intermixed with large round tubercles; a fold above the tympanum. Upper surfaces uniform deep brown; legs faintly cross-barred; sometimes a violet spot on the tip of the snout, another before the eye, and a broad violet band with dark margins from the eye along the side to the groin; brownish yellow below, with a blackish region round the vent, a short way along the thighs; tubercles of abdomen and thighs darker.

Seebsanger, Assam.

23. **Rhacophorus schlegelii.** (Plate IX. fig. 1.)

Polypedates schlegelii, *Günth. Cat.* p. 81, pl. vi. fig. G.
Hyla arborea, var. japonica, part., *Schleg. Faun. Japon.* p. 112, pl. 3. f. 5.
? Polypedates viridis, *Hallow. Proc. Ac. Philad.* 1860, p. 481.

Vomerine teeth in two slightly oblique series commencing from the inner front edge of the choanæ. Snout rounded; canthus rostralis distinct; loreal region slightly concave; nostril equally distant from the eye and the tip of the snout; interorbital space scarcely broader than the upper eyelid; tympanum half the width of the eye. Fingers nearly half webbed; toes nearly entirely webbed; disks of fingers and toes well developed, about two thirds the size of the tympanum; subarticular tubercles moderate; a rather large, but little prominent inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the eye. Skin smooth above, granular beneath; a fold above the tympanum. Bluish green above, immaculate. Male with an internal vocal sac.

Japan.

a–b, c. ♂, ♀, & hgr. Japan. Leyden Museum. (Types.)

24. **Rhacophorus microglossus.** (PLATE IX. fig. 2.)

Tongue extremely small. Vomerine teeth in two slightly oblique series commencing from the inner front edge of the choanæ. Snout rounded; canthus rostralis distinct; loreal region slightly concave; nostril equally distant from the eye and the tip of the snout; interorbital space broader than the upper eyelid; tympanum half the width of the eye. Fingers half webbed, toes three-fourths webbed; disks of fingers and toes moderate, not quite two thirds the diameter of the tympanum; subarticular tubercles not very prominent; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin smooth above, granular beneath; a fold above the tympanum. Violet above, immaculate; thighs not coloured, except a narrow violet streak along their upper side; sides of body and of limbs with small blackish specks; a white line along the outer edge of forearm and tarsus. Male with an internal vocal sac.

—— ?

a. ♂. —— ? Sir Edward Belcher [P.].

25. **Rhacophorus dennysii.**

Rhacophorus dennysi, *Blanford, Proc. Zool. Soc.* 1881, p. 224, pl. 21. f. 3.

Vomerine teeth in two straight ridges, nearly in the same right line, commencing from the inner front edge of the choanæ. Snout rounded; tympanum very little smaller than the eye. Fingers and toes with very large disks, the former incompletely, the latter entirely webbed, reaching the disks. Folds along the edges of the limbs inconspicuous. Dark violet above, below dirty white mottled with dusky; a brown spot behind the occiput; no spots on the membrane between the fingers and toes.

China?

26. **Rhacophorus maximus.** (Plate IX. fig. 3.)

Rhacophorus maximus, *Günth. Cat.* p. 83.
Rhacophorus maximus, *Günth. Rept. Brit. India,* p. 435; *Anders. Proc. Zool. Soc.* 1871, p. 210; *Stoliczka, Proc. As. Soc.* 1872, p. 108.
—— gigas, *Jerdon, Proc. As. Soc.* 1870, p. 84.

Vomerine teeth in two straight or slightly oblique series on a level with the front edge of the choanæ. Snout rounded; canthus rostralis distinct; loreal region concave; nostril halfway between the eye and the tip of the snout; interorbital space broader than the upper eyelid; tympanum somewhat more than half the width of the eye. Fingers and toes webbed to the disks, which are as large as the tympanum; subarticular tubercles well developed; a rather large, but not very prominent, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin smooth above, granular beneath; a fold above the tympanum. Violet or blue-green above, immaculate. Male with an internal vocal sac.

Himalayan Region.

a. ♀.	Afghanistan (?).		Types.
b–d. ♂ ♀.	Nepal.	B. H. Hodgson, Esq. [P.].	
e. ♀.	Sikkim.	Messrs. v. Schlaginweit [C.].	
f–i. ♀, hgr., & yg.	Darjeeling.	T. C. Jerdon, Esq. [P.].	
k–l. ♂ ♀.	Darjeeling.	W. T. Blanford, Esq. [P.].	
m–p. ♂, ♀, & yg.	Assam.	W. T. Blanford, Esq. [P.].	
q–t. ♀, hgr., & yg.	Khassya.	T. C. Jerdon, Esq. [P.].	

27. **Rhacophorus reinwardtii.**

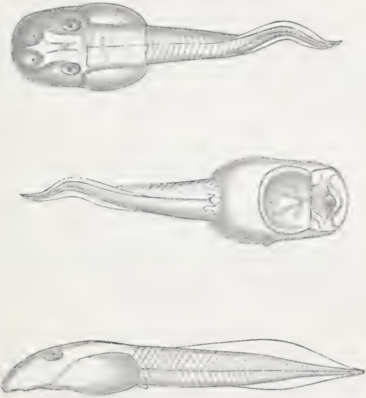
Rhacophorus reinwardtii, *Günth. Cat.* p. 82.
Hypsiboas reinwardtii, *(Boie) Wagl. Syst. Amph.* p. 200.
Hyla reinwardtii, part., *Schleg. Abbild.* p. 105, pl. 30. f. 1, 2, & 4.
Rhacophorus reinwardtii, *Tschudi, Batr.* p. 73; *Dum. & Bibr.* p. 532.

Vomerine teeth in a straight line between the front edges of the choanæ. Snout rounded; canthus rostralis distinct; loreal region slightly concave; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum three fourths the width of the eye. Fingers and toes webbed to the disks, which are as large as the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth, granular on the belly and under the thighs; a fold round the tympanum; a cutaneous fringe along the forearm, the fourth finger, the tarsus, and the fifth toe; a transverse flap of skin above the vent and another on the tibio-tarsal articulation. Olive or lilac above, uniform;

a black spot on the axillæ; membrane between the three outer fingers and the four outer toes with a large black spot. Male with an internal vocal sac.

Java; Sumatra.

a–b. ♂ ♀.	Batavia.	
c. Hgr.	Java.	Leyden Museum.



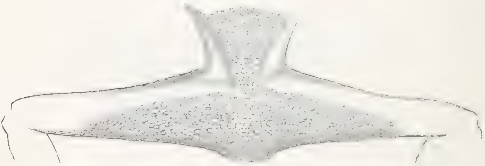
? *Rhacophorus reinwardtii.*
Larva.

There are in the Collection three tadpoles from Posata, Bantam, quite different from any Batrachian larva ever noticed, they being furnished with an adhesive ventral disk, very similar to that of the fishes of the family *Gobiesocidæ*. In one of these tadpoles the hind limbs are already so much developed as to show that the toes are webbed to the tips, which are dilated into large disks. *Rhacophorus reinwardtii* being the Javan Frog in which the toes are the most broadly webbed and furnished with large dilatations, I refer these larvæ provisionally, though not without doubt, to the present species.

Body twice as long as broad; spiraculum lateral, on the left side, nearer the base of the tail than the end of the snout. Beak strong, upper mandible transparent, lower black; lips much developed, their inner surface lamellated. The adhesive ventral apparatus represents a disk the anterior third of which is cut off; it is situated immediately behind the mouth, and its posterior border corresponds to the vertical of the spiraculum; the lateral and posterior borders are free to a slight extent. The tail measures once and two thirds or once and three fourths the length of the body; it ends into a point; there is an elevated superior and inferior crest, but it commences only at a considerable distance from the base of the tail; the vertical diameter of the latter, crest not included, is about one fifth of its length. Greyish brown above, whitish beneath; tail light-spotted. The largest specimen measures 46 millim., the smallest 38 millim.

28. Rhacophorus malabaricus.

Hyla reinwardtii, part., *Schleg. Abbild.* p. 105, pl. 30. f. 3.
Rhacophorus reinwardtii, part., *Dum. & Bibr.* p. 532, pl. 89. f. 1.
—— malabaricus, *Jerdon, Proc. As. Soc.* 1870, p. 84.



Lower surface of thighs.

Very closely allied to *R. reinwardtii*, from which it differs chiefly by the coloration. Nostril a little nearer the tip of the snout than the eye. Cutaneous flap above the vent slightly developed; granules under the thighs intermixed with larger ones. Purplish above, often speckled all over with blackish; no spots on the sides of the body nor on the membrane between the fingers and toes.

Malabar.

a. ♀.	Malabar.	T. C. Jerdon, Esq. [P.].
b, c–g. ♀ & yg.	Malabar.	Col. Beddome [C.].

29. Rhacophorus bimaculatus.

Rhacophorus reinwardtii, *Jerdon, Proc. As. Soc.* 1870, p. 84.
—— maculatus, *Anders. Journ. As. Soc.* 1871, p. 27.

Also very closely allied to *R. reinwardtii*. Vomerine series slightly oblique. Cutaneous flap above the vent and folds along the limbs slightly developed. Purple, bluish, or greenish above, sometimes speckled with black; a large black spot on each side behind the arm, generally followed by a smaller one; no spots on the membrane between the fingers and toes.

Eastern Himalayan region.

a. Many spec., ♂ ♀.	Khassya.	T. C. Jerdon, Esq. [P.].
b. ♂.	Assam.	W. T. Blanford, Esq. [P.].

30. Rhacophorus pardalis.

Rhacophorus pardalis, *Günth. Cat.* p. 83.
Rhacophorus reinwardtii, *Eyd. & Soul. Voy. Bonite,* pl. 10. f. 1.

Vomerine teeth in two slightly oblique series commencing on the inner front edge of the choanæ. Snout rounded; canthus rostralis distinct; loreal region slightly concave; nostril much nearer the tip of the snout than the eye; interorbital space as broad as, or broader than, the upper eyelid; tympanum two thirds the width of the eye. Fingers and toes webbed to the disks, which are as large as the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Smooth above, granular on the belly and under the thighs; a fold above the tympanum; a slight fringe along the forearm and tarsus; tibio-tarsal articulation with a cutaneous flap. Brown above, marbled with darker; hind limbs cross-barred. Male with an internal vocal sac.

Borneo; Philippine Islands.

a. ♂.	Borneo.	A. R. Wallace.	Types.
b. ♂.	Borneo.		
c–d, e. ♂, ♀, & hgr.	Philippines.		
f–g. ♀ & hgr.	Dinagat I.	Mr. Everett [C.].	

31. Rhacophorus madagascariensis.

Rhacophorus madagascariensis, *Peters, Mon. Berl. Ac.* 1874, p. 618, pl. 1. f. 3.

Vomerine teeth in a straight line behind the level of the choanæ. Snout rounded; canthus rostralis acute; loreal region concave; nostril halfway between the eye and the tip of the snout; tympanum nearly as large as the eye. Fingers broadly webbed, the membrane between the third and fourth reaching the disks; toes entirely webbed; disks of fingers and toes nearly as large as the tympanum; subarticular tubercles well developed; a smaller inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth, granular on the belly and under the thighs; a straight fold above the tympanum to the sides of the body; a fold of skin along the forearm and tarsus, produced into a larger triangular flap on the elbow and on the tibio-tarsal articulation. Reddish brown above, with large irregular grey spots, and speckled all over with black; limbs with very numerous cross bands; hinder side of thighs blackish brown, with closely-set white spots.

Madagascar.

4. CHIROMANTIS.

Chiromantis, *Peters, Arch. f. Naturg.* 1855, p. 56; *Günth. Cat.* p. 84; *Cope, Nat. Hist. Rev.* 1865, p. 116.
Polypedates, sp., *Günth. Proc. Zool. Soc.* 1868, p. 436.

Pupil horizontal. Tongue free and deeply notched behind. Vomerine teeth. Tympanum distinct. Fingers more or less webbed, the two inner opposite to the two outer; toes webbed; tips of fingers and toes dilated. Outer metatarsals separated by web. Omosternum and sternum with a bony style. Terminal phalanges obtuse.

Tropical Africa.

This genus closely approaches the preceding, from which it differs in the curious disposition of the fingers, the two inner being opposable to the two outer, resembling to a certain point the grasping hand of Chameleons. This character, however, is much less developed in *C. rufescens*, which constitutes a link towards *Rhacophorus.*

Synopsis of the Species.

Outer fingers nearly entirely webbed	1. *rufescens*, p. 92.
Outer fingers half webbed	2. *xerampelina*, p. 93.
Outer fingers one-third webbed..........	3. *petersii*, p. 93.

1. Chiromantis rufescens. (Plate IX. fig. 2.)

Polypedates rufescens, *Günth. Proc. Zool. Soc.* 1868, p. 486.
Chiromantis guineensis, *Buchh. & Peters, Mon. Berl. Ac.* 1875, p. 203, pl. 1. f. 1.

Vomerine teeth in two oblique groups between the choanæ. Head longer than broad; snout rounded, longer than the greatest orbital diameter, with indistinct canthus rostralis; loreal region not concave; nostril much nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum half the width of the eye. Inner fingers webbed at the base, outer ones nearly to the disks; toes moderate, entirely webbed; disks of fingers as large as the tympanum, of toes smaller; subarticular tubercles small; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Above with a few small tubercles; beneath granular; a fold above the tympanum. Upper parts brown; a rather indistinct dark cross band between the eyes.

W. Africa.

a. Hgr.	W. Africa.	(Type.)

2. Chiromantis xerampelina.

Chiromantis xerampelina, *Günth. Cat.* p. 85.
Chiromantis xerampelina, *Peters, Arch. f. Naturg.* 1855, p. 56.

Vomerine teeth between the choanæ. Head broader than long; snout shorter than, or as long as, the greatest orbital diameter. Inner fingers webbed at the base, outer ones half webbed. Sides with reddish-brown spots and bands. Male without vocal sac.

Mozambique.

3. Chiromantis petersii. (Plate X. fig. 1.)

Vomerine teeth in two oblique groups between the choanæ. Head broader than long; snout rounded, as long as the greatest orbital diameter, with indistinct canthus rostralis; loreal region not concave; nostril equally distant from the eye and the tip of the snout; interorbital space scarcely broader than the upper eyelid; tympanum half the width of the eye. Inner fingers webbed at the base, the outer ones one-third webbed; toes short, nearly entirely webbed; disks very small; subarticular tubercles well developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the belly and under the thighs; a slight fold above the tympanum. Greyish brown above, indistinctly marbled; a dark-brown stripe on the temporal region. Male with an internal vocal sac.

Interior of E. Africa.

a. ♂.	Interior of E. Africa.

5. IXALUS*.

Orchestes, *Tschudi, Batr.* p. 76.
Ixalus, *Dum. & Bibr.* viii. p. 523; *Günth. Cat.* p. 74; *Cope, Nat. Hist. Rev.* 1865, p. 116.
? Leptomantis, *Peters, Mon. Berl. Ac.* 1867, p. 32.

Pupil horizontal. Tongue free and deeply notched behind. Vomerine teeth none. Tympanum distinct or hidden. Fingers free or webbed at the base; toes webbed; tips of fingers and toes dilated into regular disks. Outer metatarsals separated by a groove or narrow web. Omosternum and sternum with a bony style. Terminal phalanges obtuse.

East Indies.

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* *Ixalus japonicus*, Hallow. Proc. Ac. Philad. 1860, p. 481.—Japan.

Synopsis of the Species.

I. Fingers free or very slightly webbed.

A. Tongue with a free, pointed papilla in the anterior part of the median line.

1. Toes more than half webbed.

A glandular lateral fold; toes nearly entirely webbed, with small disks .... 1. *opisthorhodus*, p. 95.
No glandular lateral fold; toes very broadly webbed, with large disks .... 3. *saxicola*, p. 97.

2. Toes not more than half webbed.

Tibio-tarsal articulation not reaching beyond the eye; toes webbed at the base 17. *glandulosus*, p. 103.
Tibio-tarsal articulation reaching beyond the eye; toes half webbed .... 21. *chalazodes*, p. 105.
Tibio-tarsal articulation not reaching the eye; toes half webbed .... 23. *flaviventris*, p. 105.
Snout subacuminate .... 24. *signatus*, p. 106.

B. Tongue without papilla.

1. Skin smooth above and beneath; a glandular lateral fold.

Tympanum indistinct .... 2. *fuscus*, p. 96.

2. Skin smooth above, or with small tubercles; no glandular lateral fold.

a. Tympanum distinct.

α. Tympanum at least half the width of the eye.

Tympanum half the width of the eye; toes two-thirds webbed; disks very small . 5. *oxyrhynchus*, p. 97.
Tympanum half the width of the eye; toes half webbed; disks moderate ...... 7. *leucorhinus*, p. 98.
Tympanum at least two thirds the width of the eye; toes half webbed ...... 9. *pictus*, p. 99.

β. Tympanum not half the width of the eye.

Toes fully webbed .... 6. *kakhienensis*, p. 98.
Tympanum one third the width of the eye; toes not quite half webbed; a narrow glandular line along the head and back .... 11. *nasutus*, p. 100.
Tympanum one third the width of the eye; toes half webbed; no glandular vertebral line .... 12. *aurifasciatus*, p. 100.
Tympanum about one third the size of the eye; toes one-fourth webbed; tibio-tarsal articulation reaching the eye .. 18. *lateralis*, p. 103.

Tympanum about one third the size of the eye; toes less than one-third webbed; tibio-tarsal articulation reaching beyond the eye .... 19. *punctatus*, p. 104.

Tympanum about one fourth the size of the eye; toes slightly webbed; tibio-tarsal articulation reaching the tip of the snout .... 20. *tuberculatus*, p. 104.

b. Tympanum indistinct or quite hidden.

α. Snout pointed.

Toes nearly entirely webbed .... 8. *acutirostris*, p. 99.

β. Snout rounded.

Tibio-tarsal articulation reaching the snout or somewhat beyond; toes webbed at the base; hinder side of thighs coloured .... 4. *hypomelas*, p. 97.

Tibio-tarsal articulation reaching beyond the eye; toes two-thirds webbed; hinder side of thighs not coloured .. 13. *femoralis*, p. 101.

Tibio-tarsal articulation not extending beyond the eye; toes half webbed; hinder side of thighs not coloured.... 14. *beddomii*, p. 101.

Tibio-tarsal articulation reaching beyond the eye; toes two-thirds webbed; hinder side of thighs coloured ...... 15. *variabilis*, p. 102.

Tibio-tarsal articulation reaching the eye; toes two-thirds webbed; hinder side of thighs coloured .... 22. *adspersus*, p. 105.

Toes barely half webbed; an indistinct tubercle at the base of the fourth toe . 16. *cinerascens*, p. 102.

3. Skin of upper surfaces with large conical warts.

Heel with a triangular dermal appendage. 10. *schmardanus*, p. 99.

II. Fingers half webbed.

Tympanum hidden .... 25. *bimaculatus*, p. 106.

1. Ixalus opisthorhodus.

? Limnodytes ? phyllophila, *Jerdon, Journ. As. Soc.* xxii. p. 532, *and Proc. As. Soc.* 1870, p. 85.

Ixalus opisthorhodus, *Günth. Proc. Zool. Soc.* 1868, p. 484, pl. 37. f. 3.

Tongue with a free pointed papilla in the anterior part of the median line. Snout subacuminate, prominent, about as long as the orbital diameter; canthus rostralis angular; loreal region flat, vertical; nostril nearly equally distant from the eye and the tip of the snout; interorbital space slightly broader than the upper eyelid: tympanum small, hidden. Fingers free, toes nearly entirely webbed; disks small; subarticular tubercles small; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin of upper parts smooth, with a few short oblique glandular folds; a narrow glandular lateral fold; a fold from the eye to the shoulder; quite smooth beneath. Brownish above, with a few indistinct darker markings; loreal and temporal regions dark brown; limbs cross-barred; beneath immaculate or brown-spotted on the throat and breast; lower surface of hind limbs, hinder sides of thighs, and sometimes hind part of belly beautifully rose-coloured. Male with two internal vocal sacs, the openings of which are very small.

S.W. India.

a. ♀.	Nilgherries.	W. Theobald, Esq. [P.]. (Type of *I. opisthorhodus.*)
b. Several spec., ♂ ♀.	Malabar.	Col. Beddome [C.].

2. Ixalus fuscus. (Plate X. fig. 3.)

Snout pointed, prominent, generally longer than the orbital diameter; canthus rostralis angular; loreal region flat, vertical; nostril halfway between the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum small, indistinct. Fingers free, toes entirely webbed; disks of fingers and toes rather small; subarticular tubercles small; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above and beneath; a narrow glandular lateral fold; a fold from the eye to the shoulder. Brown above; sides of head and body generally darker; limbs cross-barred; hinder side of thighs dark brown, with a more or less accentuated light stripe along the middle; whitish beneath, marbled with brown. Male with two internal vocal sacs, the openings of which are very small. From snout to vent 32 millim.

This species resembles in size and general appearance the preceding one, from which it may be easily distinguished by the absence of a papilla in the middle of the tongue. It does not exhibit the bright pink colour which is seen on the lower surface of the thighs, and sometimes on the belly, in *T. opisthorhodus.*

India.

a. Several spec., ♀ & hgr.	Travancore.	Col. Beddome [C.].
b–e. ♂ ♀.	Torocata.	Col. Beddome [C.].
f–h. ♂.	Anamallays.	Col. Beddome [C.].
i. Several spec., ♂ ♀.	Sevagherry.	Col. Beddome [C.].
k–l. ♀ & hgr.	Malabar.	Col. Beddome [C.].
m–o. ♂.	N. Canara.	T. C. Jerdon, Esq. [P.].

3. Ixalus saxicola.

Polypedates? saxicola, *Jerdon, Journ. As. Soc.* xxii. p. 533.

Tongue with a free, pointed papilla in the anterior part of the median line. Snout subacuminate, as long as the greatest orbital diameter; canthus rostralis angular; loreal region flat, vertical; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum small, hidden. Fingers free, toes very broadly webbed; disks large; subarticular tubercles small; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or somewhat beyond. Skin smooth above and beneath; a fold from the eye to the shoulder. Olive-brown above, with more or less distinct darker reticulations; limbs cross-barred; throat and breast often marbled with brown. Male with two internal vocal sacs, the openings of which are very small.

Wynaad; Malabar.

a. Several spec., ♂ ♀.	Malabar.	T. C. Jerdon, Esq. [P.]. (As *Polyp. saxicola.*)
b. Many spec., ♂ ♀.	Malabar.	Col. Beddome [C.].

4. Ixalus hypomelas. (Plate X. fig. 4.)

Ixalus hypomelas, *Günth. Ann. & Mag. N. H.* 1876, vii. p. 376.

Snout obtuse, as long as the greatest orbital diameter; canthus rostralis angular; loreal region flat, nearly vertical; nostril nearer the tip of the snout than the eye; interorbital space a little broader than the upper eyelid; tympanum small, indistinct. Fingers free, toes webbed at the base; disks and subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or somewhat beyond. Skin smooth above, slightly granular beneath. Dark brown above and beneath; a darker stripe on the side of the head and body; belly and under surface of limbs marbled with whitish; often a white line across the breast and along the under surface of the fore limbs, crossing another one along the throat, breast, and belly; sometimes a light vertebral line.

Ceylon.

a, b. Many spec.: ♀, hgr., & yg.	Ceylon.	Col. Beddome [C.].	Types.
c–e. ♀.	Ceylon.	W. Ferguson, Esq. [P.].	

5. Ixalus oxyrhynchus. (Plate X. fig. 5.)

Ixalus oxyrhynchus, *Günth. Ann. & Mag. N. H.* 1872, ix. p. 88.

Snout pointed, longer than the orbital diameter; canthus rostralis angular; loreal region flat, vertical; nostril nearer the tip of the snout than the eye; interorbital space much broader than the upper eyelid; tympanum distinct, half the width of the eye. Fingers free, toes two-thirds webbed; disks very small; subarticular tubercles well developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or beyond. Skin smooth, granular on the belly and under the thighs. Light brown above, with a large dark spot; loreal and temporal regions blackish brown. Throat dotted with brown.

Ceylon.

a–b. ♀. C. Ceylon. G. H. K. Thwaites, Esq. [P.]. (Types.)

6. Ixalus kakhienensis.

Ixalus kakhienensis, *Anders. Anat. Zool. Res. Yunnan*, p. 845, pl. 78. f. 6.

Snout short and moderately pointed; canthus rostralis rounded; tympanum less than half the size of the eye. Fingers free, toes fully webbed, with the exception of the fourth, in which the membrane does not reach its extremity; disks of fingers and toes rather large. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches slightly beyond the tip of the snout. Skin smooth above. Dark olive-black above, paling on the upper surface of the limbs to olive-brown, obscurely transversely banded with blackish brown; lower surfaces spotted and marbled with brown.

Nampoung valley, Yunnan.

7. Ixalus leucorhinus.

Ixalus leucorhinus, *Günth. Cat.* p. 75.
Ixalus leucorhinus, *Martens, Nomencl. Rept. Mus. Berol.* p. 36.
—— temporalis, *Günth. Rept. Brit. Ind.* p. 434, pl. 26. f. E.

Snout acuminate, a little longer than the orbital diameter; canthus rostralis distinct; loreal region slightly concave; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum distinct, half the width of the eye. Fingers very slightly, toes half webbed; disks and subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granular beneath; a fold from the eye to the shoulder. Brown or olive above; a dark stripe below the canthus rostralis and on the temporal region; sometimes a large hexagonal light spot on the snout; generally a dark vitta between the eyes, and another, arched one on each side of the back; sometimes a light vertebral line or stripe, extending or not along the hind limbs; throat generally dotted with brown, sometimes quite brown with an immaculate median line. Male with an internal vocal sac.

Ceylon; India.

a, b, c–d, e. ♀.	Ceylon.	(Types of *Ixalus temporalis.*)
f, g–k, l. ♂, ♀, hgr., & yg.	Ceylo[illegible]	Col. Beddome [C.].
m. Several spec.: ♂, ♀, & hgr.	Ceylon.	W. Ferguson, Esq. [P.].
n. ♂.	C. Ceylon.	G. H. K. Thwaites, Esq. [P.].
o–p. ♀.	S. Ceylon.	
q, r–s. ♀ & hgr.	Malabar.	Col. Beddome [C.].
t–w. Hgr.	N. Canara.	T. C. Jerdon, Esq. [P.].

8. **Ixalus acutirostris.**

Ixalus acutirostris, *Peters, Mon. Berl. Ac.* 1867, p. 32.

Snout pointed; canthus rostralis distinct; nostril nearer the tip of the snout than the eye; tympanum very small, hidden. Toes nearly entirely webbed. Skin smooth, with small glandules above, granular on the belly and under the thighs. Brown above, grey on the sides; an indistinct, brown, triangular spot between the eyes.

Mindanao, Philippines.

9. **Ixalus pictus.**

Ixalus pictus, *Peters, Mon. Berl. Ac.* 1871, p. 580, *and Ann. Mus. Civ. Gen.* iii. 1872, p. 44, pl. 6. f. 3.

Snout pointed, longer than the orbital diameter; canthus rostralis angular; loreal region slightly concave; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum distinct, rather more than two thirds the width of the eye. Fingers free, toes half webbed; disks rather large. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches beyond the tip of the snout. Upper surfaces covered with small warts. Light brown above, with small orange, dark-edged spots.

Sarawak, Borneo.

10. **Ixalus schmardanus.**

? Ixalus pœcilopleurus, *Günth. Cat.* p. 75.

Polypedates? schmardana, *Kelaart, Prodr. Faun. Zeyl.* ii. p. 22; *Günth. Rept. Brit. Ind.* p. 433.

? Ixalus pœcilopleurus, *Martens, Nomencl. Rept. Mus. Berol.* p. 36.

? —— schmardæ, *Peters, Mon. Berl. Ac.* 1860, p. 186.

Snout subtriangular, slightly longer than the orbital diameter; canthus rostralis distinct; loreal region concave; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum distinct, half the width of the eye. Fingers free, toes half webbed; disks and subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Above with large warts, conical on the eyelids, sides, back, and limbs, confluent into symmetrical lines on the head; a spur-like appendage on the tibio-tarsal articulation; outer edge of forearm and tarsus with a row of large conical tubercles; granular beneath, the granules larger round the lip. Olive above, indistinctly spotted; flanks, belly, lower surfaces of limbs, and hinder side of thighs white, with large dark-brown marblings. Male with an internal vocal sac.

Ceylon.

a, b. ♂ & hgr.	C. Ceylon.	G. H. K. Thwaites, Esq. [P.].
c–e. ♀ & hgr.	Ceylon.	W. H. Holdsworth, Esq. [C.].
f–i. ♂ & yg.	Ceylon.	W. Ferguson, Esq. [P.].

11. **Ixalus nasutus.** (Plate X. fig. 6.)

Ixalus nasutus, *Günth. Proc. Zool. Soc.* 1868, p. 484.

Snout pointed, a little longer than the orbital diameter; canthus rostralis distinct; loreal region slightly concave; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum distinct, one third the width of the eye. Fingers free, toes not quite half webbed; disks as large as the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Above with very small warts or oblique glandular lines; a very narrow, whitish, glandular raised line along the middle of the head and back; beneath granular. Grey above, clouded with darker; loreal and temporal regions blackish; limbs cross-barred; spotted with brown beneath. Male with an internal vocal sac.

Ceylon.

a. ♂	Ceylon.	(Type.)
b–c. ♀.	Ceylon.	Col. Beddome [C.].
d. ♀.	C. Ceylon.	G. H. K. Thwaites, Esq. [C.].

12. **Ixalus aurifasciatus.**

Ixalus aurifasciatus, *Günth. Cat.* p. 74.
Hyla aurifasciata, *Schleg. Abbild.* p. 27, pl. 9. f. 4.
Orchestes aurifasciatus, *Tschudi, Batr.* p. 76.
Ixalus aurifasciatus, *Dum. & Bibr.* p. 523.

Snout rounded, about as long as the orbital diameter; canthus rostralis distinct; loreal region slightly concave; nostril a little nearer the tip of the snout than the eye; interorbital space a little broader than the upper eyelid; tympanum distinct, one third the diameter of the eye. Fingers very slightly, toes half webbed; disks as large as the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin with a few small tubercles above, granular on the belly and under the thighs. Brown above, darker marbled: a light cross band between the eyes; legs cross-barred.

Java.

a. ♀.	Java.	Leyden Museum.
b. Young.	Java.	

13. Ixalus femoralis.

Ixalus femoralis, *Günth. Rept. Brit. Ind.* p. 434, pl. 26. f. D.
—— pulchellus, *Günth. Ann. & Mag. N. H.* 1872, ix. p. 88.
—— fergusoni, *Günth. eod. loc.* 1876, xvii. p. 379.

Snout rounded, as long as the orbital diameter; canthus rostralis moderately distinct; loreal region very slightly concave; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum small, hidden. Fingers slightly, toes two-thirds webbed; disks and subarticular tubercles moderate; a very small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so far. Skin smooth or minutely glandular above; a slight fold from the eye to the shoulder; beneath granular, the granules very large on the belly. Above bluish green, purple, or brownish, immaculate or with black specks, in one specimen with a few large reddish-brown spots; arms colourless, thighs with a stripe of pigment on its upper surface; in one specimen the hinder side of the thighs black-spotted. Male with an internal vocal sac.

Ceylon.

a. ♀.	Ceylon.	(Type of *I. femoralis.*)
b–c. ♂ ♀.	Ceylon.	
d–f, g, h. ♂ ♀.	Ceylon.	Col. Beddome [C.].
i–l. ♂, ♀, & hgr.	Ceylon.	G. H. K. Thwaites, Esq. [P.].
m. ♀.	Ceylon.	G. H. K. Thwaites, Esq. [P.]. (Type of *I. pulchellus.*)
n–p. ♀, hgr., and yg.	Ceylon.	W. Ferguson, Esq. [P.]. (Types of *I. fergusoni.*)
q–u, v–w. ♂, ♀, hgr., & yg.	Ceylon.	W. Ferguson, Esq. [P.].

14. Ixalus beddomii. (Plate X. fig. 7.)

Ixalus beddomii, *Günth. Proc. Zool. Soc.* 1875, p. 575.

Snout rounded, as long as the orbital diameter; canthus rostralis moderately distinct; loreal region very slightly concave; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum small, hidden. Fingers free, toes half webbed; disks and subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above, granular beneath; a fold from the eye to the shoulder. Uniform greenish above; thighs colourless, except a greenish stripe along their upper surface. Male with an internal vocal sac.

S.W. India.

a. Many spec.: ♂, ♀, hgr., & yg.	Atray Mallay, Travancore (4000 ft.).	Col. Beddome [C.]. (Types.)
b. Several spec.: ♂, ♀, & yg.	Malabar.	T. C. Jerdon, Esq. [P.].

15. Ixalus variabilis.

Ixalus variabilis, *Günth. Cat.* p. 74, pl. iv. ff. A & B.
Ixalus variabilis, *Günth. Rep. Brit. Ind.* p. 433, *and Proc. Zool. Soc.* 1875, p. 573.
? Phyllomedusa ? wynaadensis, *Jerdon, Journ. As. Soc.* xxii. p. 533.

Snout rounded, as long as, or rather shorter than, the orbital diameter; canthus rostralis distinct; loreal region slightly concave; nostril nearer the tip of the snout than the eye; interorbital space a little broader than the upper eyelid; tympanum indistinct, about half the width of the eye. Fingers very slightly, toes two-thirds webbed; disks and subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches generally between the eye and the tip of the snout. Skin smooth above, granular beneath; a fold from the eye to the shoulder. Above bluish, greenish, brownish, or blackish, uniform, or variously spotted or speckled with darker or lighter; variations of colour endless. Male with an internal vocal sac.

Ceylon; S. India.

a, b–e, f, g, h, i, k. ♂, ♀, & hgr.	Ceylon.	Types.
l. ♀, skeleton.	Ceylon.	
m–r. ♀.	Ceylon.	W. Ferguson, Esq. [P.].
s–u. Hgr.	Ceylon.	Col. Beddome [C.].
v, w, x. Many spec.: ♂, ♀, & hgr.	Malabar.	Col. Beddome [C.].
y. Several spec., hgr.	Sevagherry.	Col. Beddome [C.].
z–η. Many spec.: ♂, ♀, & hgr.	Pycara.	Col. Beddome [C.].
θ–κ. ♂ ♀.	——?	T. C. Jerdon, Esq. [P.].

16. Ixalus cinerascens.

Ixalus cinerascens, *Stoliczka, Proc. As. Soc.* 1870, p. 275, & 1872, p. 109.

Snout obtuse, shorter than the orbital diameter; tympanum quite indistinct. Fingers quite free, toes barely half webbed; disks well developed; metatarsus with a small inner tubercle and a very indistinct one at the base of the fourth toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Above with a few scattered tubercles; belly and lower side of thighs densely and coarsely tuberculated; a fold from the eye to the shoulder. Above olive ashy, very minutely speckled with dark, paling at the sides; limbs cross-barred; below pale brownish white, somewhat purer on chin and throat, and all over finely speckled and punctated with dark.

Moulmein.

17. **Ixalus glandulosus.**

Ixalus glandulosus, *Jerdon, Journ. As. Soc.* xxii. p. 532; *Günth. Proc. Zool. Soc.* 1875, p. 573.
? Phyllomedusa ? tinniens, *Jerdon, l. c.* p. 533.
Ixalus montanus, *Günth. Proc. Zool. Soc.* 1875, p. 574, pl. 67. f. A.

Tongue with a free, pointed papilla on the anterior part of the median line. Snout rounded, as long as the orbital diameter; canthus rostralis distinct; loreal region slightly concave; nostril equally distant from the eye and the tip of the snout; interorbital space broader than the upper eyelid; tympanum small, hidden. Fingers free, toes webbed at the base; disks and subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or not quite so far. Skin of upper surfaces smooth or with small indistinct tubercles; sides generally glandular; lower surfaces granular; a fold from the eye to the shoulder. Dark purplish brown above, uniform, or with indistinct markings, or greyish brown with symmetrical dark-brown markings; beneath immaculate, or more or less spotted. Male with an internal vocal sac.

S. India.

a. ♀.	Travancore.	Col. Beddome [C.].
b, c–g. Hgr.	Malabar.	Col. Beddome [C.].
h, i–m. Many spec.: ♂, ♀, hgr., & yg.	Anamallays.	Col. Beddome [C.].
n–p. ♀.	Kudra Mukl (6000 ft.).	Col. Beddome [C.]. (Types of *I. montanus.*)
q. Many spec.: ♂, ♀, & hgr.	Kudra Mukl (6000 ft.).	Col. Beddome [C.].
r. ♀.	Nilgherries.	F. Day, Esq. [P.].
s. Several spec.: ♂, ♀, & hgr.	Nilgherries.	T. C. Jerdon, Esq. [P.]. (As *Phyllomedusa tinniens.*)
t–x, y. Many spec.: ♂, ♀, & hgr.	——?	W. Theobald, Esq. [P.].

18. **Ixalus lateralis.**

Ixalus lateralis, *Anders. Journ. As. Soc.* 1871, p. 29, *and Anat. Zool. Res. Yunnan*, p. 844, pl. 78. f. 5.

Snout short, rounded, as long as the eye; canthus rostralis angular; tympanum about one third the size of the eye. Fingers free, toes one-fourth webbed; tips of fingers and toes very feebly dilated. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, or slightly tubercular above; a fold from the eye over the tympanum to the shoulder; under surface smooth. Uniform brown above; three blackish spots, with a white spot in the centre of some, in linear series along the side; an oblong black spot on the side of the sacrum above the loin; a narrow white line on the middle of the side, between the front and hind limbs; a black band along the supra-tympanal fold; back of thighs black, with a white spot at the end of the band: limbs cross-barred.

Birmah.

19. **Ixalus punctatus.**

Ixalus punctatus, *Anders. Journ. As. Soc.* 1871, p. 27.

Snout rounded, its length a little more than the width between the eyes; canthus rostralis distinct; nostril nearer the tip of the snout than the eye; tympanum distinct, about one third the size of the eye. Fingers free, toes less than one-third webbed; disks of fingers well developed, of toes smaller; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the eye. Back nearly smooth, with a few scattered minute tubercles on the sacral region; finely tubercular on the sides and on the under surface of the body and thighs; a fold from the eye to the shoulder. Brownish above, as far forwards as the anterior angle of the eye, where the brown abruptly ceases in a straight line, the upper surface of the snout being light olive; upper lip white; a dark-brown band from the snout to the tympanum; sides bluish grey, the minute tubercles dark brown; under surfaces dirty yellowish, the chin, throat, and thorax with scattered brown spots.

Nilgherries.

20. **Ixalus tuberculatus.**

Ixalus tuberculatus, *Anders. Anat. Zool. Res. Yunnan*, p. 845, pl. 78. f. 7.

Snout short, rounded; canthus rostralis feebly developed; nostril much nearer the tip of the snout than the eye; tympanum distinct, about one fourth the size of the eye. Fingers free, toes slightly webbed; disks of fingers large, of toes smaller. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Small scattered isolated tubercles on the upper surface and on the sides of the body; finely granular on the belly and under the thighs. Uniform dark olive above; all the small tubercles, as a rule, white; in some specimens a transverse pale band between the eyes and two similar bands behind them; a large black irregular spot on the groin, and two yellow ones on the sides; limbs cross-barred; chest and belly yellowish, the former with fine brown punctulations.

Kakhyen Hills.

21. **Ixalus chalazodes.**

Ixalus chalazodes, *Günth. Proc. Zool. Soc.* 1875, p. 474, pl. 67. f. B.

Tongue with a free, pointed papilla in the anterior part of the median line. Snout rounded, as long as the orbital diameter; canthus rostralis indistinct; loreal region very slightly concave; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum small, hidden. Fingers free, toes half webbed; disks moderate; subarticular tubercles double under the third and fourth fingers; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin of upper parts smooth; a few round tubercles on the flanks, on the hind part of the back, and on the metatarsus; a slight fold from the eye to the shoulder; beneath granular. Uniform bluish green above, the round tubercles white.

Travancore.

a. ♀. Travancore. Col. Beddome [C.]. (Type.)

22. **Ixalus adspersus.** (PLATE X. fig. 8.)

Ixalus adspersus, *Günth. Ann. & Mag. N. H.* 1872, ix. p. 87.

Snout rounded, as long as the orbital diameter; canthus rostralis distinct; loreal region slightly concave; nostril a little nearer the tip of the snout than the eye; interorbital space a little broader than the upper eyelid; tympanum small, indistinct. Fingers slightly, toes two-thirds webbed; disks and subarticular tubercles well developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above, granular beneath; a fold from the eye to the shoulder. Upper parts dark violet-brown, with numerous round, smaller and larger, yellowish spots; hinder side of thighs marbled with brown; throat and breast marbled with brown. Male with an internal vocal sac, the openings of which are larger than in the other species of *Ixalus*.

Ceylon.

a. ♂. C. Ceylon. G. H. K. Thwaites, Esq. [P.]. (Type.)

23. **Ixalus flaviventris.** (PLATE XI. fig. 1.)

Tongue with a free, pointed papilla in the anterior part of the median line. Snout rounded, as long as the orbital diameter; canthus rostralis distinct; loreal region very slightly concave; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum small, indistinct. Fingers free, toes half webbed; disks and subarticular tubercles moderate; a very small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above, granular beneath; a fold from the eye to the shoulder. Above dark brown with round yellow spots, or brown with dark reticulations or spots; hinder side of thighs dark brown, with round yellow spots; lower surfaces yellow, marbled with brown. Male with an internal vocal sac.

Malabar.

a–b, c, d, e. Many spec.: ♂, ♀, hgr., & yg.	Malabar.	Col. Beddome [C.].

24. Ixalus signatus. (Plate XI. fig. 2.)

Tongue with a small papilla in the anterior part of the median line. Snout subacuminate, as long as the orbital diameter; canthus rostralis distinct; loreal region slightly concave; nostril nearer the tip of the snout than the eye; tympanum small, hidden. Fingers free, toes half webbed; disks and subarticular tubercles well developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or somewhat beyond. Skin smooth above, granular beneath. Greyish or brownish above; a dark cross band between the eyes, and a large X-shaped marking on the back; upper lip with a few white spots; limbs cross-barred; hinder side of thighs not coloured; sometimes with brown vermiculations: beneath immaculate. Male with an internal vocal sac.

India.

a. Several spec.: ♂, ♀, & hgr.	——?	W. Theobald, Esq. [C.].
b–c. ♂ ♀.	Malabar.	Col. Beddome [C.].

25. Ixalus ? bimaculatus.

Leptomantis bimaculatus, *Peters, Mon. Berl. Ac.* 1867, p. 32.

Snout rounded, scarcely longer than the orbital diameter; canthus rostralis distinct; tympanum one third the width of the eye, covered by the skin. Fingers half webbed, first opposite to the others; toes nearly entirely webbed; disks moderate; a small inner metatarsal tubercle. Smooth above, granular beneath. Violet-brown above, with irregular dark spots and cross bands; limbs cross-barred; a yellowish-white spot beneath the eye, followed by a much smaller one; yellowish white beneath. Male with an internal vocal sac.

Mindanao, Philippines.

6. CORNUFER.

Cornufer, *Tschudi, Batr.* p. 28; *Dum. & Bibr.* viii. p. 616; *Günth. Cat.* p. 84; *Cope, Nat. Hist. Rev.* 1865, p. 115.
Hylodes, sp., *A. Dum. Ann. Sc. Nat.* (3) xix. p. 177.
Halophila, *Girard, Proc. Ac. Philad.* vi. 1853, p. 423; *Cope, l. c.*
Platymantis, *Günther, Cat.* p. 93.

Pupil horizontal. Tongue free and deeply notched behind. Vomerine teeth. Tympanum distinct. Fingers free; toes free or slightly webbed, the tips more or less dilated. Outer metatarsals united or separated by a groove. Omosternum and sternum with a bony style. Terminal phalanges T-shaped.

Polynesia; Austro-Malayasia; Philippine Islands; (Java?).

Synopsis of the Species.

I. Tips of fingers dilated into large disks.

Occiput longitudinally concave; tibio-tarsal articulation reaching beyond the tip of the snout .... 1. *unicolor*, p. 107.
Occiput flat; tibio-tarsal articulation not reaching the tip of the snout .... 2. *dorsalis*, p. 108.
Occiput flat; tibio-tarsal articulation reaching nearly the tip of the snout; tongue with a conical papilla .... 3. *guentheri*, p. 108.

II. Tips of fingers slightly dilated.

A. Tibio-tarsal articulation reaching beyond the tip of the snout.

Tympanum two thirds the width of the eye; first finger as long as second .... 4. *meyeri*, p. 109.
Tympanum two fifths the width of the eye; first finger shorter than second .... 5. *jagorii*, p. 109.

B. Tibio-tarsal articulation not reaching the tip of the snout.

Skin with longitudinal folds; first finger extending beyond second .... 6. *corrugatus*, p. 110.
Skin with longitudinal folds; first and second fingers equal.......... 7. *punctatus*, p. 110.
Skin smooth; first finger extending beyond second .... 8. *vitianus*, p. 110.
Skin smooth: first and second fingers equal. 9. *unilineatus*, p. 111.

1. Cornufer unicolor.

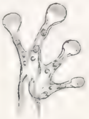
Cornufer unicolor, *Günth. Cat.* p. 84.
Cornufer unicolor, *Tschudi, Batr.* p. 28; *Dum. & Bibr.* p. 617.
? Halophila dorsualis, *Girard, U.S. Expl. Exped., Herp.* p. 56, pl. 4. ff. 12–16.

Vomerine teeth in two groups behind the level of the choanæ. Head much depressed; occiput longitudinally concave, with a longitudinal median crest; canthus rostralis angular; tympanum two thirds the width of the eye. Fingers slender, first as long as second; toes webbed at the base; disks rather large. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. A conical tubercle on the upper eyelid; scapulary and temporal regions with small glandules and short folds; a strong fold from the eye above the tympanum to the angle of the mouth; the remainder of the upper surfaces smooth; belly granular. Dark brown above, lighter beneath.

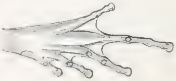
New Guinea.

2. **Cornufer dorsalis.**

Cornufer dorsalis, *Günth. Cat.* p. 84.
Cornufer dorsalis, *A. Dum. Ann. Sc. Nat.* (3) xix. p. 174.
Halophila vitiensis, *Girard, Proc. Ac. Philad.* vi. p. 423.
—— chryseus, *Cope, Proc. Ac. Philad.* 1862, p. 154.
—— platydactyla, *Günth. Proc. Zool. Soc.* 1864, p. 49.



Lower surface of hand.



Lower surface of foot.

Vomerine teeth in two oblique groups behind the level of the choanæ. Snout once and one third as long as the orbital diameter; canthus rostralis angular; interorbital space as broad as the upper eyelid; crown flat; tympanum half the width of the eye. Fingers moderate, first shorter than second, the tips dilated into large disks; toes moderate, webbed at the base, with small disks; subarticular tubercles well developed; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth, granular on the belly and under the thighs; a small tubercle on the upper eyelid. Greyish or reddish brown above, with more or less distinct blackish markings on the back; sometimes a light line along the middle of the head and back and along the hind limbs; lower surfaces more or less marbled with brown.

Fiji Islands; (Java ?).

a. Hgr.	Fiji Islands.	Voyage of the 'Herald.'
b. Several spec., ♀ & hgr.	Fiji Islands.	(Type of *H. platydactyla.*)

3. **Cornufer guentheri.** (Plate XI. fig. 3.)

Tongue with a conical papilla in the anterior part of the median line. Vomerine teeth in two oblique groups behind the level of the hinder edge of the choanæ. Snout once and one third as long as the orbital diameter, with angular canthus rostralis and concave loreal region; interorbital space a little narrower than the upper eyelid; crown flat; tympanum half the diameter of the eye. Fingers moderate, first shorter than second; toes moderate, slightly webbed; disks of fingers large, of toes moderate; subarticular tubercles well developed; a small inner, and a rather indistinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin with short glandular folds above, smooth beneath, except on the lower belly and under the thighs; a fold above the tympanum; upper eyelid with a conical tubercle. Olive above, marbled with darker; a rather indistinct lighter lateral streak beginning behind the eye; limbs cross-barred. From snout to vent 37 millim.

Philippines.

a. ♀.	Dinagat Island.	Mr. Everett [C.].

4. **Cornufer meyeri.** (Plate XI. fig. 4.)

Platymantis meyeri, *Günth. Proc. Zool. Soc.* 1873, p. 171.

Tongue with a conical papilla in the anterior part of the median line. Vomerine teeth in two oblique groups behind the level of the hinder edge of the choanæ. Snout as long as the orbital diameter, with angular canthus rostralis and concave loreal region; interorbital space a little narrower than the upper eyelid; tympanum two thirds the width of the eye. Fingers moderate, first extending as far as second; toes slender, with a rudimentary web; disks very small; subarticular tubercles much developed; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin with short glandular folds above, smooth beneath; a strong fold from the eye to the shoulder. Brownish above, marbled with darker, the median part of the back lighter; limbs regularly cross-barred; throat marbled with brown.

Philippines.

a. Hgr.?	Laguna del Bay.	Dr. A. B. Meyer [C.].	(Type.)

5. **Cornufer jagorii.**

Halophila jagorii, *Peters, Mon. Berl. Ac.* 1863, p. 456.

Vomerine teeth in two oblique series behind the level of the hinder edge of the choanæ. Snout as long as the greatest orbital diameter; tympanum two fifths the width of the eye. First finger a little shorter than second; toes with a rudimentary web; disks small but distinct; subarticular tubercles much developed; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout.

Skin of upper surfaces with granules and distinct glandular longitudinal folds. Dark brown above; whitish, spotted with brown, beneath.

Samar Island.

6. Cornufer corrugatus.

Platymantis plicifera, *Günth. Cat.* p. 95, pl. viii. f. B.
Hylodes corrugatus, *A. Dum. Ann. Sc. Nat.* (3) xix. p. 176.
Platymantis corrugata, *Peters, Mon. Berl. Ac.* 1873, p. 611; *Peters & Doria, Ann. Mus. Civ. Gen.* xiii. p. 420.
—— plicifera, *Günth. Proc. Zool. Soc.* 1877, p. 132.

Vomerine teeth in two oblique groups behind the level of the hinder edge of the choanæ. Snout once and one third the length of the orbital diameter; interorbital space as broad as the upper eyelid; crown flat; tympanum vertically oval, two thirds the width of the eye. Fingers moderate, first extending beyond second; toes moderate, with a rudimentary web; tips of fingers and toes scarcely dilated; subarticular tubercles much developed; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so far. Skin granulated, with symmetrical longitudinal folds on the back; a strong fold from the eye to the shoulder. Brownish or olive above, with indistinct darker markings; loreal and temporal regions blackish; yellowish beneath, immaculate or speckled with brown on the throat. Male with two internal vocal sacs.

Philippines; New Guinea; (Java?).

a–b, c–d. ♂, ♀, & yg.	Philippines.	(Type of *Platymantis plicifera*.)
e. ♀.	Laguna del Bay.	Dr. A. B. Meyer [C.].
f. ♂.	Negros.	Dr. A. B. Meyer [C.].
g–l. ♀.	Duke of York Island.	Rev. G. Brown [C.].
m–n, o. ♀.	Mansinam, N. Guinea.	

7. Cornufer punctatus.

Platymantis punctata, *Peters & Doria, Ann. Mus. Civ. Gen.* xiii. 1878, p. 420.

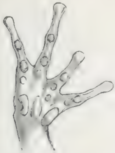
Principal characters of *C. corrugatus*, but the two inner fingers of equal length. Brown above; sides of head and upper and under surfaces of limbs dotted with orange; hinder side of thighs vermiculated with orange.

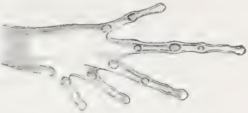
Mount Arfak, New Guinea.

8. Cornufer vitianus.

Platymantis vitianus, *Günth. Cat.* p. 93.
Hylodes vitianus, *A. Dum. Ann. Sc. Nat.* (3) xix. p. 177; *Jacq. & Guich. Rept. in Voy. Pôle Sud*, p. 26, pl. i. f. 4.
Halophila heros, *Girard, Proc. Ac. Philad.* vi. p. 423, *and U.S. Expl. Exped., Herp.* p. 55, pl. iv. ff. 1–6.

Vomerine teeth in two oblique groups behind the level of the hinder edge of the choanæ. Snout once and a half as long as the orbital diameter; canthus rostralis rather angular; crown flat;


Lower surface of hand.


Lower surface of foot.

interorbital space as broad as the upper eyelid; tympanum vertically oval, half the width of the eye. Fingers and toes moderate, quite free, with slightly dilated tips and very strong subarticular tubercles; a blunt, oval inner, and a rather indistinct rounded outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth, granular on the belly and under the thighs. Dark brown above, often lighter dotted and marbled; more or less marbled with brown beneath.

Polynesia; (Indian Archipelago?).

a–c. ♀ & yg.	Fiji Islands.	Lords of the Admiralty [P.].
d. ♀, skeleton.	Fiji Islands.	Lords of the Admiralty [P.].
e. ♀	Fiji Islands.	Mus. Econ. Geol.
f. Yg.	Oualan Island.	
g–h, i–l, m. ♀, hgr., & yg.	Fiji Islands.	Voyage of the 'Herald.'

9. **Cornufer unilineatus.**

Platymantis unilineata, *Peters, Mon. Berl. Ac.* 1869, p. 447.

Habit, dentition, and proportion of the limbs as in *C. vitianus*, but the two inner fingers of equal length. Dark brown above, with a few indistinct darker spots, and a line from the tip of the snout to the vent.

Great Viti Island.

7. PHRYNOBATRACHUS.

Stenorhynchus, *Smith, Ill. S. Afr., Rept., App.* p. 23; *Günth. Cat.* p. 133.
Phrynobatrachus, *Günth. Proc. Zool. Soc.* 1862, p. 190.
Leptoparius, *Peters, Mon. Berl. Ac.* 1863, p. 452.
Dicroglossus, sp., *Cope, Proc. Ac. Philad.* 1862, p. 341.
Staurois, sp., *Cope, Nat. Hist. Rev.* 1865, p. 117.
Heteroglossa, sp., *Cope, Journ. Ac. Philad.* 1867, vi. p. 193.
Artholeptis, sp., *Peters, Mon. Berl. Ac.* 1875, p. 210.

Pupil horizontal. Tongue free and deeply notched behind. Vomerine teeth none. Tympanum distinct or hidden. Fingers free; toes webbed, the tips not or but little dilated. Outer metatarsals separated by web. Omosternum and sternum with a bony style; terminal phalanges simple or slightly dilated.

Africa.

Synopsis of the Species.

Habit stout; tympanum hidden	1. *natalensis*, p. 112.
Habit slender; tympanum hidden	2. *plicatus*, p. 112.
Habit slender; tympanum distinct........	3. *acridoides*, p. 113.

1. Phrynobatrachus natalensis.

Stenorhynchus natalensis, *Günth. Cat.* p. 133.
Stenorhynchus natalensis, *Smith, Ill. S. Afr., Rept., App.* p. 23.
Phrynobatrachus natalensis, *Günth. Proc. Zool. Soc.* 1862, p. 190, & 1864, p. 480; *Bocage, Jorn. Sc. Lisb.* 1866, i. p. 54.
Dicroglossus angustirostris, *Cope, Proc. Ac. Philad.* 1862, p. 341.
Arthroleptis natalensis, *Peters, Mon. Berl. Ac.* 1875, p. 210.

Tongue with a free conical papilla in the middle. Habit stout. Head small; snout short, subacuminate, without canthus rostralis; interorbital space narrower than the upper eyelid; tympanum indistinct, half as large as the eye. First finger not extending quite as far as second; toes half webbed; subarticular tubercles well developed; two small tubercles on the metatarsus and another on the middle of the inner edge of the tarsus. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout. Above with irregular flat warts. Olive above, indistinctly marbled with darker; legs cross-barred; whitish beneath, the throat brown-spotted in the female, blackish in the male. Male with an external subgular vocal sac.

South and West Africa.

a. ♀.	Natal.	Sir A. Smith [P.].
b. ♀.	Natal.	J. Ayres, Esq. [P.]. (Type of *Phrynobatrachus natalensis*.)
c–f. ♂ ♀.	Duque de Bragrance.	Dr. Barboza du Bocage [P.].

2. Phrynobatrachus plicatus.

Hyperolius plicatus, *Günth. Cat.* p. 88, pl. vii. f. G.
Staurois plicatus, *Cope, Nat. Hist. Rev.* 1865, p. 117.
Heteroglossa plicata, *Cope, Journ. Ac. Philad.* 1867, vi. p. 198.
Arthroleptis plicata, *Peters, Mon. Berl. Ac.* 1875, p. 210.

Tongue with a free conical papilla in the middle. Habit slender. Head moderate; snout subacuminate, with angular canthus rostralis; interorbital space a little broader than the upper eyelid; tympanum hidden. First finger as long as second; toes two-thirds webbed; tips of fingers and toes dilated into small disks; two small metatarsal tubercles. The hind limb being carried forwards along the body, the metatarsal tubercles reach far beyond the tip of the snout. Back with a few scattered small tubercles, and with a glandular fold on each side, reaching from the posterior border of the eye to the sacral region, both convergent on the back behind the shoulders. Above brownish, variegated with darker; a dark-brown temporal spot; hinder side of thighs with a dark-brown vitta; throat brownish. Male with an internal subgular vocal sac.

West Africa.

a. ♂.	Coast of Guinea.	(Type.)
b. ♂.	Coast of Guinea.	Sir A. Smith [P.].

3. Phrynobatrachus acridoides.

Staurois acridoides, *Cope, Journ. Ac. Philad.* 1867, vi. p. 198.

Habit slender. Snout narrowed, rounded, slightly prominent, with obtuse canthus rostralis; tympanum distinct, half the size of the eye. Toes two-thirds webbed; tips of fingers and toes dilated into small disks; three metatarsal tubercles. The hind limb being carried forwards along the body, the metatarsal tubercles reach beyond the tip of the snout. Skin with weak tubercles above, and two plicæ convergent from orbits, then divergent and terminating behind scapulæ. Above dark greyish olive, with frequently a narrow vertebral band; a dark band on side, on front and hind face of femur, the latter with a pale one above it. Throat and breast brown, white punctate. Limbs cross-barred.

Zanzibar.

8. NYCTIBATRACHUS.

Pupil erect. Tongue free, and deeply notched behind. Vomerine teeth. Tympanum hidden. Fingers free; toes webbed, the tips dilated into small disks. Outer metatarsals separated by web. Omosternum and sternum with a bony style. Terminal phalanges bifurcate.

India.

This new genus is related to *Rana* by the general characters, to *Rhacophorus* by the structure of the distal phalanges, but differs from both by the erect pupil. This appears to be intermediate between the triangular shape, as exhibited by *Bombinator*, and the elliptical exhibited by *Alytes*, *Pelobates*, and others.

1. Nyctibatrachus pygmæus. (PLATE XII. fig. 1.)

Rana pygmæa, *Günth. Proc. Zool. Soc.* 1875, p. 568.

Vomerine teeth in two small oblique series behind the level of the choanæ. Habit stout. Snout very short, without canthus rostralis; eyes very prominent, obliquely directed forwards and upwards; upper eyelid very narrow; interorbital space much broader than the upper eyelid. Fingers moderate, first shorter than second; toes moderate, half webbed, the tips swollen into very small disks; subarticular tubercles not much developed; a small blunt, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the metatarsal tubercle reaches the eye or slightly beyond. Skin smooth, with some glandular folds on the head and the front part of the back; a very distinct, oblique one beneath the eye, and a vertical one on the tip of the snout. Dark brown above, with rather indistinct blackish markings; light brown beneath. Male without vocal sac.

S. India.

a. Many spec., ♂ ♀.	Anamallays.	Col. Beddome [C.].	(Types.)

2. **Nyctibatrachus major.** (Plate XII. fig. 2.)

Vomerine teeth in two straight series, oblique in the young, much behind the level of the choanæ. Habit stout. Snout very short, without canthus rostralis; eyes very prominent, obliquely directed forwards and upwards; upper eyelid very narrow; interorbital space twice as broad as the upper eyelid. Fingers moderate, first much shorter than second; toes moderate, nearly entirely webbed; tips of fingers and toes swollen into small disks; subarticular tubercles not much developed; a small, elongate, scarcely prominent, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or somewhat beyond. Above with very small, closely-set vermiculated folds; a rather indistinct oblique fold beneath the eye; upper eyelids covered with strong tubercles; throat with slight longitudinal folds. Brown above, with rather indistinct darker and lighter markings; brownish beneath, more or less speckled with brown. Male with two internal vocal sacs. From snout to vent 55 millim.

S. India.

a–c. ♂ ♀.	Malabar.	Col. Beddome [C.]. (As *Pyxicephalus rufescens.*)
d–e, f–g, h–l. ♂ & yg.	Malabar.	Col. Beddome [C.].
m–o. ♂, ♀, & hgr.	Wynaad.	T. C. Jerdon, Esq. [P.].

9. NANNOPHRYS.

Nannophrys, *Günth. Proc. Zool. Soc.* 1868, p. 482.
Trachycephalus, (*non Tschudi*) *Ferguson, Ann. & Mag. N. H.* (4) xv. p. 128.

Pupil horizontal. Tongue free and deeply nicked behind. Vomerine teeth. Tympanum distinct. Fingers and toes free, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous;

sternum a cartilaginous plate. Diapophyses of sacral vertebra slightly dilated. Terminal phalanges simple.

Ceylon.

1. **Nannophrys ceylonensis.** (Plate XII. fig. 3.)

Nannophrys ceylonensis, *Günth. Proc. Zool. Soc.* 1868, p. 482, and 1875, p. 568.

Trachycephalus ceylanicus, *Ferguson, Ann. & Mag. N. H.* (4) xv. p. 128.

Vomerine teeth in two small groups close together behind the choanæ. Lower jaw with two slight prominences in front. Habit of *Rana kuhlii*. Head broad; snout short, rounded, with angular canthus rostralis; interorbital space narrower than the upper eyelid; in the adult, the derm of the sides of the head and of the forehead becomes involved in the rough cranial ossification; tympanum about half the size of the eye. First finger shorter than second; the difference between the first and second fingers is the same as that between the second and third; subarticular tubercles of fingers and toes not much developed; inner metatarsal tubercle elongate, rather indistinct; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum or the eye. Skin slightly tubercular above, smooth beneath; a fold of the skin uniting the posterior edges of the upper eyelids, and extending from the eye, over the tympanum, to the shoulder. Upper parts brown, marbled with darker; upper lip and sides of body and limbs with small light spots; hind limbs cross-barred; whitish beneath, the male's throat brown. Male with two internal vocal sacs.

Ceylon.

a–d. Hgr.	Ceylon.	(Types.)
e–f. ♀.	Ceylon.	Col. Beddome [C.].
g–k. ♂, ♀, & hgr.	Ceylon.	G. H. K. Thwaites, Esq. [P.].

2. **Nannophrys guentheri.** (Plate XII. fig. 4.)

Vomerine teeth in two indistinct groups behind the choanæ. Lower jaw with slight traces of bony prominences in front. Head rather small, not bony; snout short, rounded, with angular canthus rostralis; interorbital space narrower than the upper eyelid; tympanum not distinctly defined. First finger shorter than second; the difference of length between the first and second fingers is much greater than that between the second and third; tips of fingers pointed; toes with a short, but very distinct web at the base; subarticular tubercles of fingers and toes not much developed; inner metatarsal tubercle elongate, rather indistinct; no outer tubercle. The hind limb being carried forwards along the body the tibio-tarsal articulation reaches the tip of the snout. Skin strongly tubercular above, smooth beneath; a fold of the skin uniting the posterior edges of the upper eyelids, and extending from the eye, over the tympanum, to the shoulder. Upper parts brown, marbled with darker; upper lip and sides of body and limbs with small light spots; hind limbs cross-barred; uniform whitish beneath. Male with two internal vocal sacs.

The longer hind limbs and the smaller head give this species a much more slender appearance than the preceding; the proportions of the fingers are also important differences between the two species.

Ceylon.

a–b. ♂. Ceylon. G. H. K. Thwaites, Esq. [P.].

10. ARTHROLEPTIS.

Arthroleptis, *Smith, Ill. S. Afr., Rept., App.* p. 24; *Günth. Cat.* p. 135; *Cope, Nat. Hist. Rev.* 1865, p. 115.

? Heteroglossa, *Hallow. Proc. Ac. Philad.* 1857, p. 64; *Günth. l. c.* p. 26; *Cope, l. c.* p. 117.

Hemimantis, *Peters, Mon. Berl. Ac.* 1863, p. 451; *Cope, l. c.* p. 115.

Pupil horizontal. Tongue heart-shaped, free behind. Vomerine teeth none. Tympanum distinct or hidden. Fingers free; toes nearly free, with blunt or slightly dilated tips. Outer metatarsals united. Omosternum and sternum with a bony style. Terminal phalanges simple.

Africa.

Synopsis of the Species.

I. Toes very slightly webbed, nearly free.

A. Skin smooth above.

A single metatarsal tubercle .... 1. *wahlbergii*, p. 117.
A single metatarsal tubercle; third finger twice as long as second .... 3. *macrodactylus*, p. 117.
Two metatarsal tubercles; tympanum hidden .... 5. *boettgeri*, p. 118.
A tarsal and two metatarsal tubercles .... 4. *dispar*, p. 117.

B. Skin with tubercles or warts above.

A single metatarsal tubercle; a fold along the sides of the body .... 2. *pœcilonotus*, p. 117.
Three metatarsal tubercles; a spine-like dermal appendage on the hind part of each eyelid........................ 6. *calcaratus*, p. 118.
Head distinctly broader than the body.... 7. *horridus*, p. 118.

II. Toes very distinctly webbed.

Head nearly as long as the body; belly smooth .... 8. *africanus*, p. 119.

1. Arthroleptis wahlbergii.

Arthroleptis wahlbergii, *Günth. Cat.* p. 135.
Arthroleptis wahlbergii, *Smith, Ill. S. Afr., Rept., App.* p. 24; *Peters, Mon. Berl. Ac.* 1870, p. 115, pl. 1. f. 2.

Head moderate; tympanum distinct, half the width of the eye. Third finger once and a half the length of second; disks of fingers and toes very small; a single, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, subgranular on the abdomen and under the thighs. Upper surfaces ash-grey, variegated with brown.

S. Africa.

a. Very bad state.	Cape of Good Hope.	Sir A. Smith [P.].

2. Arthroleptis pœcilonotus.

Arthroleptis pœcilonotus, *Peters, Mon. Berl. Ac.* 1863, p. 446.

Head moderate; tympanum distinct, hardly half the width of the eye. Third finger not twice as long as second; disks of fingers and toes very slight; a single, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin of the back with very small granules; a fold along the sides of the body and another across the chest. Brown above, variegated with darker.

Boutry, coast of Guinea.

3. Arthroleptis macrodactylus. (PLATE XI. fig. 5.)

Head moderate; tympanum distinct, half the width of the eye. Third finger very long, twice as long as second; disks of fingers and toes very slight; a single, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the lower belly. Uniform brown above; a dark streak over the tympanum. From snout to vent 25 millim.

Gaboon.

a. Hgr.?	Gaboon.	H. Ansell, Esq. [P.].

4. Arthroleptis dispar.

Arthroleptis dispar, *Peters, Mon. Berl. Ac.* 1870, p. 649, pl. 2. f. 3, & 1875, p. 210, pl. 3. f. 1-3.

Head moderate; tympanum distinct, hardly half the width of the eye. Third finger once and a half the length of second; disks of fingers and toes very distinct; a tarsal and two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth. Dark brown above, or light with symmetrical dark markings, with or without a light vertebral line and another along the hind part of the thighs; limbs cross-barred.

W. Africa.

5. **Arthroleptis boettgeri.** (PLATE XI. fig. 6.)

Head moderate; tympanum hidden. Third finger scarcely more than once and a half the length of second; tips of fingers and toes not dilated; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the shoulder. Skin perfectly smooth; a curved fold from the eye to the shoulder. Olive above; a light line from below the eye to the shoulder; in some specimens, a light vertebral line and a broad light stripe from the scapular region to the groin; transversely dilated dark spots on the legs; belly generally with round black spots, inferior surface of limbs with dark vermiculations. Male with a large external subgular vocal sac. From snout to vent 19 millim.

Kaffraria.

a–d. ♂.	Vleis, Kaffraria.	F. M. Weale, Esq. [P.].

This species is named in honour of Dr. O. Boettger, of Frankfurt a. M.

6. **Arthroleptis calcaratus.**

Hemimantis calcaratus, *Peters, Mon. Berl. Ac.* 1863, p. 452.
Arthroleptis calcaratus, *Peters, Mon. Berl. Ac.* 1875, p. 210.

Head moderate; tympanum hidden, one third the width of the eye. Third finger once and a half the length of second; fingers and toes with distinct disks; three metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Upper surface of body with a few flat warts; a spine-line dermal appendage on the hind part of each eyelid; lower surfaces quite smooth. Brown above, black-spotted; sometimes a broad yellow vertebral line.

Boutry, coast of Guinea.

7. **Arthroleptis horridus.**

Hemimantis horrida, *Boettger, Zool. Anz.* 1880, p. 282.

Head large, distinctly broader than the body; tympanum slightly distinct, one fourth the size of the orbit. Fingers and toes with distinct disks, those of the latter smaller; a single metatarsal tubercle. Skin tubercular. Grey above; three transverse black stripes on the back; limbs cross-barred; sides of belly black, with a few large white spots.

Nossi Bé, Madagascar.

8. **Arthroleptis ? africanus.**

Heteroglossa africana, *Günth. Cat.* p. 26.
Heteroglossa africana, *Hallow. Proc. Ac. Philad.* 1857, p. 64; *Cope, Proc. Ac. Philad.* 1862, p. 343.

Head nearly as long as the body; tympanum distinct. Toes very distinctly webbed; disks of fingers and toes very small. Skin smooth above and beneath. Dark brown or chocolate above, mingled to a slight extent with ash; posterior extremities cross-barred; abdomen ash-coloured; chin and throat chocolate-spotted; under surface of extremities blackish, mingled with ash.

Gaboon.

11. RAPPIA*.

Eucnemis, sp., *Tschudi, Batr.* p. 35; *Dum. & Bibr.* viii. p. 525.
Hyperolius, sp., (*non Gray*) *Rapp, Arch. f. Naturg.* 1842, p. 289; *Günth. Cat.* p. 85; *Cope, Nat. Hist. Rev.* 1865, p. 116.
Rappia, sp., *Günth. Zool. Rec.* i. p. 130.

Pupil horizontal. Tongue heart-shaped, free behind. Vomerine teeth none. Tympanum distinct or hidden. Fingers and toes more or less webbed, the tips dilated into large disks. Outer metatarsals united. Omosternum and sternum with a bony style. Terminal phalanges obtuse.

Tropical Africa.

This genus differs from *Ixalus*, which it represents in the Æthiopian Region, by the absence of a groove or web between the outer metatarsals and by the generally less deep emargination of the tongue. The species hitherto referred to this genus show two different forms of pupil; and I have, on account of this, split them into two genera, maintaining under *Rappia* those species only that have the pupil transverse; those with erect pupil I unite under *Megalixalus*.

A considerable number of species have been established upon coloration only. But coloration is not of specific importance in Frogs, and I therefore have united all those forms that are not distinguished by any structural character.

The name *Hyperolius*, given by Rapp on account of *Eucnemis* being preoccupied, has been changed by Dr. Günther into *Rappia*, Gray having several years before Rapp named a genus of Frogs *Uperoleia*, the correct spelling of which would be *Hyperolius*.

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* 1. *Eucnemis viriflavus*, Dum. & Bibr. p. 528.—Abyssinia.

2. *Hyperolius flavoviridis*, Peters, Arch. f. Naturg. 1855, p. 56.—Mozambique.

3. *Hyperolius tettensis*, Peters, *l. c.*—Mozambique.

4. *Eucnemis betsileo*, Grandid. Ann. Sc. Nat. (5) xv. 1872.—Madagascar.

5. *Eucnemis antanosi*, Grandid. *l. c.*—Madagascar.

The shape of the pupil not having been noticed by the authors, these species may as well belong to the following genus as to *Rappia*.

Synopsis of the Species.

I. Tympanum hidden.

A. Fingers two-thirds webbed ...... 9. *ocellata*, p. 123.

B. Fingers one-third or half webbed.

1. *horstockii*, p. 120. 2. *renifer*, p. 120. 3. *fulvovittata*, p. 121.
5. *marmorata*, p. 121. 6. *argus*, p. 122. 7. *salinæ*, p. 123.
8. *lagoensis*, p. 123. 11. *fuscigula*, p. 124. 14. *tuberilinguis*, p. 125.
16. *guttulata*, p. 125. 17. *bocagii*, p. 126. 21. *microps*, p. 127.
22. *nasuta*, p. 127.

C. Fingers not one-third webbed.

4. *tristis*, p. 121. 10. *concolor*, p. 124. 18. *rutenbergii*, p. 126.
19. *cinctiventris*, p. 126. 20. *pusilla*, p. 127.

II. Tympanum distinct.

12. *idæ*, p. 124. 13. *steindachneri*, p. 125. 15. *reticulata*, p. 125.

1. **Rappia horstockii.**

Hyperolius horstockii, *Günth. Cat.* p. 85.
Hyla horstockii, *Schleg. Abbild.* p. 24.
Eucnemis horstockii, *Tschudi, Batr.* p. 76; *Dum. & Bibr.* p. 529.
Hyperolius horstockii, *Steind. Novara, Amph.* p. 50.

Snout rounded, as long as or a little longer than the orbital diameter; tympanum hidden. Fingers half webbed; toes two-thirds webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth, granular on the belly and under the thighs; no strong fold across the chest. Greyish or brown above; a dark, above light-edged, band from the tip of the snout through the eye along each side of the body; thighs not coloured. Male with a subgular vocal sac and an adhesive disk covering the throat.

S. Africa; Madagascar.

a, b. ♂ ♀.	S. Africa.	Sir J. Richardson [P.].
c. ♀.	Cape of Good Hope.	
d. ♀.	Peri Bush.	H. Trevelyan, Esq. [P.].
e. ♀.	S.E. Betsileo, Madagascar.	
f. ♀.	——?	

2. **Rappia renifer.**

Hyperolius renifer, *Boettger, Zool. Anz.* 1881, p. 46, *and Abh. Ver. Brem.* vii. p. 187.

Head broad, broader than the body; snout obtuse; interorbital pace grooved; tympanum hidden. Fingers one-third, toes three-fourths webbed. Skin smooth above. Dark olive-green above; an indistinct blackish line from the tip of the snout through the eye to the temporal region; a rather ill-defined whitish streak from the eye to the groin; thighs not coloured. Male with a kidney-shaped adhesive gular disk.

Madagascar.

3. Rappia fulvovittata.

Hyperolius fulvovittatus, *Cope, Proc. Ac. Philad.* 1863, p. 517.
—— quinquevittatus, *Bocage, Jorn. Sc. Lisb.* 1866, i. p. 77.
Rappia fulvovittata, *Günth. Proc. Zool. Soc.* 1868, p. 479.
? Hyperolius fimbriolatus, *Buchh. & Peters, Mon. Berl. Ac.* 1876, p. 121.
Hyperolius vittiger, *Peters, Mon. Berl. Ac.* 1876, p. 122.

Snout rounded, as long as the orbital diameter; tympanum hidden. Fingers one-third, toes two-thirds webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation does not reach the eye. Body slender. Skin smooth, granular on the belly; no strong fold across the chest. Light yellowish brown above; a black band from the tip of the snout through the eye along the side of the body; two others along the middle of the back, meeting between the eyes; thighs coloured.

W. Africa.

a. ♀.	Duque de Bragance.	Prof. Barboza du Bocage [P.].

4. Rappia tristis.

Hyperolius tristis, *Bocage, Jorn. Sc. Lisb.* 1866, i. p. 76.

Snout rather long, rounded; tympanum hidden. Fingers webbed at the base; toes nearly entirely webbed. Skin smooth above, with a few folds along the back, granular on the belly and under the thighs. Dark greenish brown above, covered with confluent black dots; upper surface of thighs yellowish grey, speckled with black; a broad black line along the canthus rostralis and through the eye to the shoulder.

Duque de Bragance, Angola.

5. Rappia marmorata.

Hyperolius viridiflavus, (*non D. & B.*) *Günth. Cat.* p. 85.
—— marmoratus, *Günth. l. c.* p. 85.
—— parallelus, *Günth. l. c.* p. 86, pl. viii. f. A.
—— tæniatus, *Günth. l. c.* p. 87.
—— marginatus, *Günth. l. c.* p. 87.
Hyperolius marmoratus, *Rapp, Arch. f. Naturg.* 1842, p. 289, t. 6; *Smith, Ill. S. Afr., Rept., App.* p. 26; *Bocage, Jorn. Sc. Lisb.* 1866, i. p. 74; *Steind. Novara, Amph.* p. 50, pl. 2. f. 19 & 20.
—— tæniatus, *Peters, Arch. f. Naturg.* 1855, p. 57.
—— marginatus, *Peters, l. c.*

Hyperolius insignis, *Bocage, Proc. Zool. Soc.* 1867, p. 844, f. 2.
—— toulsonii, *Bocage, l. c.* p. 845, f. 3.
Rappia tæniata, *Günth. Proc. Zool. Soc.* 1868, p. 479.
—— insignis, *Günth. l. c.*
—— marginata, *Günth. l. c.*
Hyperolius huillensis, *Bocage, Jorn. Sc. Lisb.* xiv. p. 225.
? —— picturatus, (*Schleg.*) *Peters, Mon. Berl. Ac.* 1875, p. 206, pl. 2. f. 2.
—— nitidulus, *Buchh. & Peters, Mon. Berl. Ac.* 1875, p. 209, pl. 3. f. 4.

Snout rounded, as long as the orbital diameter; tympanum hidden. Fingers nearly half webbed, toes entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, slightly granular on the belly and under the thighs; a strong fold across the chest in females. Coloration subject to infinite variation; thighs not coloured; upper surfaces dark purplish brown or vinaceous red, spotted or reticulated with whitish, or with three white parallel bands, or whitish with irregular blackish spots or longitudinal bands, &c. Male with a subgular vocal sac and an adhesive disk covering the throat.

Tropical Africa.

a. ♀ (uniform light bluish grey).	Abyssinia.	
b–d. ♂ ♀.	Zambesi Expedition.	Dr. Livingstone [P.].
e–f, g–i. ♂, ♀, & hgr.	Zambesi Expedition.	Sir J. Kirk [P.].
k–l. ♀.	E. Africa.	Dr. Günther [P.].
m. ♀.	Natal.	T. Ayres [C.].
n, o–p. Many spec., ♂ ♀.	Natal.	Sir A. Smith [P.].
q–t. ♂ ♀.	Cape of Good Hope.	Rev. H. H. Methuen [P.].
u. ♀.	Cape of Good Hope.	(Type of *Hyperolius parallelus.*)
v. ♂.	River Donda.	
w. ♀.	Benguella.	Prof. Barboza du Bocage [P.]. (As typical of *Hyperolius insignis.*)
x–z. ♀.	Duque de Bragance, Angola.	Prof. Barboza du Bocage [P.].
α–δ. ♀.	Huilla, Angola.	Dr. Welwitsch [P.].
ε–η. ♀ & hgr.	Ambris, Angola.	(Types of *Hyperolius parallelus.*)
θ. Hgr.	Gambia.	
ι, κ, λ–ξ. ♂ ♀.	W. Africa.	
ο. ♀.	W. Africa.	Mr. Fraser [C.].
π. ♀.	W. Africa.	Prof. Barboza du Bocage [P.]. (As typical of *Hyperolius huillensis.*)

6. **Rappia argus.**

Hyperolius argus, *Günth. Cat.* p. 87.
Hyperolius argus, *Peters, Arch. f. Naturg.* 1855, p. 57.
Rappia argus, *Günth. Proc. Zool. Soc.* 1868, p. 479.

Snout rounded, as long as the orbital diameter; tympanum hidden. Fingers half webbed; toes entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the belly; no strong fold across the chest. Light brown above; a white, black-edged streak from the upper eyelid to the tip of the snout, sometimes continued along the side of the body; back with large white, black-edged, rounded spots, or small black spots; thighs not coloured.

E. Africa.

a. ♀.	Zambesi Expedition.	Sir J. Kirk [P.].
b–c. ♀.	Zambesi River.	

7. **Rappia salinæ.**

Eucnemis salinæ, *Bianc. Spec. Zool. Mossamb., Rept.* p. 24, t. 5. f. 2.
Rappia salinæ, *Günth. Proc. Zool. Soc.* 1868, p. 479.

Snout rounded, as long as the orbital diameter; tympanum hidden. Fingers half webbed; toes nearly entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth, granular on the belly; no strong fold across the chest. Uniform greyish brown above. Male with a subgular vocal sac and an adhesive disk covering the throat.

E. Africa.

a, b, c. ♂ ♀.	Zambesi Expedition.	Dr. Livingstone [P.].

8. **Rappia lagoensis.**

Rappia lagoensis, *Günth. Proc. Zool. Soc.* 1868, p. 487, pl. 40. f. 2.
Hyperolius lagoensis, *Peters, Mon. Berl. Ac.* 1875, p. 207.

Snout rounded, as long as the orbital diameter; tympanum hidden. Fingers half webbed; toes entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth, granular on the belly; no strong fold across the chest, Brownish above, coarsely reticulated with blackish; a black streak along the canthus rostralis; upper surface of limbs spotted with black.

W. Africa.

a. ♀.	Lagos.	H. T. Ussher, Esq. [C.].	Types.
b. ♀.	W. Africa.		

9. **Rappia ocellata.**

Hyperolius ocellatus, *Günth. Cat.* p. 88, pl. vii. f. B.

Snout rounded, as long as the orbital diameter; tympanum hidden. Fingers two-thirds webbed; toes entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth, granular on the belly; no strong fold across the chest. Light reddish brown above, with small rounded black spots; sides dark brown, with white spots; a narrow brown streak along the upper side of the thighs.

W. Africa.

a. ♀.	Fernando Po.	Types.
b. Hgr.	Angola.	

10. Rappia concolor.

Hyperolius modestus, *Günth. Cat.* p. 88.
Ixalus concolor, *Hallow. Proc. Ac. Philad.* 1844, p. 60.
Hyperolius concolor, *Cope, eod. loc.* 1862, p. 342; *Peters, Mon. Berl. Ac.* 1875, p. 208.
? Hyperolius coccotis, *Cope, l. c.* p. 342.

Snout subtriangular, a little longer than the greatest orbital diameter; tympanum hidden. Fingers webbed at the base; toes two-thirds webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the belly and under the thighs; no strong fold across the chest. Greenish above, uniform; thighs colourless, except a narrow, rather indistinct, whitish vitta along their upper surface.

Tropical Africa.

a. ♀.	Gold Coast,	(Type of *Hyperolius modestus.*)
b. ♀.	Shiré Valley, Zambesi.	
c–d. ♀.	Zambesi Expedition.	Sir J. Kirk [P.].
e. ♀.	Quellimane.	Sir J. Kirk [P.].

11. Rappia fuscigula.

Hyperolius fuscigula, *Bocage, Jorn. Sc. Lisb.* 1866, i. p. 76.
Rappia fuscigula, *Günth. Proc. Zool. Soc.* 1868, p. 479.
Hyperolius olivaceus, *Buchh. & Peters, Mon. Berl. Ac.* 1876, p. 120.

Snout rounded, as long as the orbital diameter; tympanum hidden. Fingers one-third, toes three-fourths webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the belly and under the thighs; no strong fold across the chest. Uniform bluish green above; a blackish line along the flanks; upper side of thighs blackish, with a light median stripe.

W. Africa.

a. ♀.	W. Africa.	J. C. Salmon, Esq. [P.].
b. ♀	W. Africa.	
c–d, e. ♀.	Eloby District, Gaboon.	H. Ansell, Esq. [P.].

12. Rappia idæ.

Hyperolius idæ, *Steind. Novara, Amph.* p. 51, pl. 5. f. 10.

Snout rounded, as long as the orbital diameter; tympanum distinct. Fingers one-third, toes two-thirds webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Green above; sides of the body and upper sides of thighs with large white, dark brown-edged spots.

Madagascar.

13. Rappia steindachneri.

Hyperolius steindachneri, *Bocage, Jorn. Sc. Lisb.* 1866, i. p. 75.
Rappia steindachneri, *Günth. Proc. Zool. Soc.* 1868, p. 479.

Snout rounded, as long as the orbital diameter; tympanum slightly distinct. Fingers half webbed, toes entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the belly and under the thighs; no strong fold across the chest. Upper surface of head and back pinkish orange; sides vinaceous red; lower surfaces, flanks, and upper surface of thighs dark purplish brown, with round white spots.

W. Africa.

a. ♀.	Old Calabar.

14. Rappia tuberilinguis.

Hyperolius tuberilinguis, (*Sundev.*) *Smith, Ill. S. Afr., Rept., App.* p. 26; *Peters, Mon. Berl. Ac.* 1870, p. 115, pl. 1. f. 3.

Tongue with two conical papillæ in front. Snout rounded, as long as the orbital diameter; tympanum hidden. Fingers one-third, toes two-thirds webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth above. Above immaculate.

Kaffraria.

15. Rappia reticulata.

Hyperolius reticulatus, *Günth. Proc. Zool. Soc.* 1864, p. 482, pl. 33.
Rappia reticulata, *Günth. Proc. Zool. Soc.* 1868, p. 480.

Resembles very much *R. guttulata*, but the tympanum is visible. Upper parts densely covered with round white spots, separated from one another by the brown ground-colour, which appears as a regular network; thighs not coloured.

——?

a. ♀.	——?	(Type.)

16. Rappia guttulata.

Hyperolius guttulatus, *Günth. Cat.* p. 86, pl. vii. f. A.

Head much depressed; snout rounded, a little longer than the orbital diameter; tympanum hidden. Fingers half webbed; toes entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth, slightly granular on the belly; no strong fold across the chest. Upper parts brown, finely white-dotted; thighs not coloured.

—— ?

a, b–c. ♀.	Africa.	(Types.)

17. Rappia? bocagii.

Hyperolius bocagei, *Steind. Novara, Amph.* p. 51, pl. 5. f. 11.

Head much depressed: snout rounded, as long as the orbital diameter; tympanum hidden. Fingers half webbed; toes entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Above with a few flat warts; throat and belly granular. Light brown above, minutely speckled with blackish.

Angola.

18. Rappia rutenbergii.

Hyperolius rutenbergi, *Boettg. Zool. Anz.* 1881, p. 47, *and Abh. Ver. Brem.* vii. p. 189.

Snout short, subacuminate; tympanum hidden. Fingers one-fourth, toes half webbed. Skin smooth, granular on the belly. Blackish grey above, with five longitudinal white stripes; thighs not coloured.

Madagascar.

19. Rappia cinctiventris.

Hyperolius cinctiventris, *Cope, Proc. Ac. Philad.* 1862, p. 342; *Boettg. Abhandl. Senckenb. Ges.* xii. p. 112.
—— citrinus, *Günth. Proc. Zool. Soc.* 1864, p. 311, pl. 27. f. 2; *Peters, Mon. Berl. Ac.* 1866, p. 891.
—— granulosus, *Peters, l. c.*
Rappia citrina, *Günth. Proc. Zool. Soc.* 1868, p. 481.
Hyperolius glandicolor, *Peters, Mon. Berl. Ac.* 1878, p. 208, pl. 2. f. 9.

Snout rounded, as long as the orbital diameter; tympanum hidden. Fingers webbed at the base; toes two-thirds webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Upper parts with small scattered tubercles; throat tubercular; belly and under surface of thighs granular; a more or less distinct fold surrounding the median abdominal region. Uniform yellowish above; thighs, under surface of limbs, and sides of belly brown or blackish. Male with a subgular vocal sac, but no adhesive disk.

Tropical Africa.

a. ♂.	Senegal.	Mr. Whitfield [P.].	Types of *H. citrinus.*
b. ♂.	Zambesi Expedition.	Dr. Livingstone [P.].	
c. ♂.	King-Williamstown.	H. Trevelyan, Esq. [P.].	

20. Rappia pusilla.

Crumenifera pusilla, *Cope, Proc. Ac. Philad.* 1862, p. 343.

Snout short, truncate; tympanum hidden. Fingers one-fourth, toes three-fourths webbed. Skin smooth, transversely areolate on the belly. Pale straw-colour; a faint brown line on the canthus rostralis. Male with a large vocal vesicle, which is prolonged posteriorly, and bound beneath by a median frenum, on each side of which a plicate pouch projects deeply into the vesicular cavity.

Umvoti, W. Africa.

21. Rappia microps.

? Hyperolius sugillatus, *Cope, Proc. Ac. Philad.* 1862, p. 342.
Hyperolius microps, *Günth. Proc. Zool. Soc.* 1864, p. 311, pl. 27. f. 3; *Bocage, Jorn. Sc. Lisb.* 1866, i. p. 75.
? Hyperolius heuglini, *Steind. Verh. zool.-bot. Ges. Wien*, 1864, p. 244, pl. 15. f. 4.
Rappia microps, *Günth. Proc. Zool. Soc.* 1868, p. 481.

Snout rounded, a little longer than the orbital diameter; tympanum hidden. Fingers one-third, toes two-thirds webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth, slightly granular on the belly; a strong fold across the chest. Light brown above; a white line along the canthus rostralis, continued behind the eye along the anterior half of the length of the body; its rostral portion with a dark-brown inferior margin; a few minute dark-brown dots on the head. Male with a subgular vocal sac and an adhesive disk covering the throat.

E. Africa.

a. ♂. ——? Dr. Günther [P.]. } Types.
b. ♀. Zambesi Expedition. Sir J. Kirk [C.]. }

22. Rappia nasuta.

Hyperolius nasutus, *Günth. Proc. Zool. Soc.* 1864, p. 482, pl. 33. f. 2.
Rappia nasuta, *Günth. Proc. Zool. Soc.* 1868, p. 481.

Snout pointed, produced, longer than the orbital diameter; tympanum hidden. Fingers one-third, toes half webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin smooth, slightly granular on the belly; no strong fold across the chest. Brownish, with small blackish dots on the head and back.

Angola.

a. ♀. Duque de Bragance. Prof. Barboza du Bocage [P.]. (Type.)

12. MEGALIXALUS.

Eucnemis, sp., *Tschudi, Batr.* p. 35; *Dum. & Bibr.* viii. p. 525.
Hyperolius, sp., *Rapp, Arch. f. Naturg.* 1842, p. 289; *Günth. Cat.* p. 85; *Cope, Nat. Hist. Rev.* 1865, p. 116.
Rappia, sp., *Günth. Zool. Rec.* i. p. 130.
Megalixalus, sp., *Günth. Proc. Zool. Soc.* 1868, p. 485.

Pupil vertical. Tongue heart-shaped or subrhomboidal, nicked and free behind. Vomerine teeth none. Tympanum distinct or hidden. Fingers and toes more or less webbed, the tips dilated into large disks. Outer metatarsals not separated. Omosternum and sternum with a bony style. Terminal phalanges obtuse.

Tropical Africa.

Synopsis of the Species.

I. Tympanum distinct.

Fingers half webbed	1. *seychellensis*, p. 128.
Fingers slightly webbed	2. *flavomaculatus*, p. 128.

II. Tympanum hidden.

Skin quite smooth above; tongue subrhomboidal	3. *madagascariensis*, p. 129.
Skin quite smooth above; tongue heart-shaped.	4. *leptosomus*, p. 129.
Skin of upper surfaces with very small tubercles	5. *fornasinii*, p. 130.
Upper surface of head studded with acute tubercles	6. *spinifrons*, p. 130.
Skin of upper surfaces covered with spinous warts; fingers two-thirds webbed	7. *spinosus*, p. 130.

1. Megalixalus seychellensis.

Hyperolius seychellensis, *Günth. Cat.* p. 89.
Eucnemis seychellensis, *Tschudi, Batr.* p. 76; *Dum. & Bibr.* p. 537.
Megalixalus infrarufus, *Günth. Proc. Zool. Soc.* 1868, p. 485.

Tongue subrhomboidal, nicked behind. Head large; snout rounded, longer than the orbital diameter; tympanum distinct. Fingers half webbed, toes nearly entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the belly and under the thighs. Uniform greenish above, rufous beneath; lips and upper eyelid margined with white; thighs coloured.

Seychelles.

a-b. ♀ & yg. Seychelles. E. P. Wright, Esq. [P.]. (Types of *Megalixalus infrarufus.*)

2. Megalixalus flavomaculatus.

Hyperolius flavomaculatus, *Günth. Proc. Zool. Soc.* 1864, p. 310, pl. 27. f. 1.
Rappia flavomaculata, *Günth. Proc. Zool. Soc.* 1868, p. 481.

Tongue heart-shaped. Snout rounded, as long as the orbital diameter; tympanum distinct. Fingers slightly, toes two-thirds webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the belly and under the thighs. Upper parts dark violet, with round yellow spots; upper side of thighs coloured.

E. Africa.

a. ♀.	Rovuma Bay.	Dr. Livingstone [P.].	(Type.)

3. Megalixalus madagascariensis.

Hyperolius madagascariensis, *Günth. Cat.* p. 88.
Eucnemis madagascariensis, *Dum. & Bibr.* p. 528.
Hyperolius madagascariensis, *Steind. Novara, Amph.* p. 51.

Tongue subrhomboidal, nicked behind. Snout rounded, as long as the orbital diameter; tympanum hidden. Fingers webbed at the base, toes entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the belly and under the thighs. Greyish above, closely and minutely speckled with brown; a blackish stripe along the canthus rostralis; thighs not coloured, or with a few brown specks. Male with a subgular vocal sac and an adhesive disk covering the throat.

Madagascar.

The specimens *o–r* differ much in colour from the typical form. Not having been able to perceive any structural difference whatever, I must consider them merely as a variety of *M. madagascariensis*, which may be called *alboguttata*. The blackish stripe along the canthus rostralis is missing, and the upper surfaces (except the thighs and arms) are covered with round, white, black-edged spots.

a–c. ♂ ♀.	Madagascar.	
d–e. ♀ & yg.	S. Madagascar.	
f. ♀.	Mohambo.	
g–k. ♀ & hgr.	Mahanora.	
l–n. ♀.	Anzahamaru.	
o–p. ♀.	S.E. Betsileo.	
q–r. ♀.	Madagascar (?).	M. L. Bouton [P.].

4. Megalixalus leptosomus.

Hyperolius leptosomus, *Peters, Mon. Berl. Ac.* 1877, p. 619, f. 5.

Habit slender. Snout short, rounded, as long as the eye; tympanum hidden. Fingers webbed at the base, toes two-thirds webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth, granular on the belly and under the thighs. Brown; the snout and three stripes along the back white; sides of head and body and outer side of leg and tarsus with white dots.

Chincoxo, W. Africa.

5. Megalixalus fornasinii.

Hyperolius fornasinii, *Günth. Cat.* p. 89.
Eucnemis fornasinii, *Bianc. Spec. Zool. Mossamb., Rept.* t. 5. f. 1.
Hyperolius bivittatus, *Peters, Arch. f. Naturg.* 1855, p. 56.
Rappia fornasinii, *Günth. Proc. Zool. Soc.* 1868, p. 479.
Hyperolius dorsalis, (*Schleg.*) *Peters, Mon. Berl. Ac.* 1875, p. 206, pl. 1. f. 2.

Tongue heart-shaped. Snout rounded, as long as the orbital diameter: tympanum hidden. Fingers one-third webbed, toes nearly entirely webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin with very small scattered tubercles above, granular on the belly and under the thighs. Brown above; two white bands along the back, confluent on the snout; thighs not coloured.

Tropical Africa.

a–b. Hgr.	Mozambique.	Prof. Peters [P.].
c–d. ♀.	Shiré Valley, Zambesi.	
e–h. ♀.	Zambesi Expedition.	Dr. Livingstone [P.].
i, k. ♀.	Zanzibar.	Sir J. Kirk [C.].
l. Hgr.	Quellimane.	Sir J. Kirk [C.].
m. ♀.	Lake Nyassa.	

6. Megalixalus ? spinifrons.

Hyperolius spinifrons, *Cope, Proc. Ac. Philad.* 1862, p. 342.

Tongue elliptic, deeply nicked. Snout rounded; tympanum hidden. Fingers slightly webbed. Skin of upper surfaces smooth, except upon the front and muzzle, where it is studded with acute tubercles as in the cyprinid genus *Ceratichthys*. Above yellowish brown, with a dark-brown lateral band between the eye and the groin, which is pale-bordered anteriorly; also a median band which commences between the eye, and becomes wider and more indistinct posteriorly; femur not paler than tibia.

Umvoti, W. Africa.

7. Megalixalus spinosus.

Hyperolius spinosus, *Buchh. & Peters, Mon. Berl. Ac.* 1875, p. 208, pl. 1. f. 2.

Tongue heart-shaped. Head large; snout longer than the greatest orbital diameter; tympanum hidden. Fingers and toes two-thirds webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Upper parts covered with spinous warts; belly and underside of thighs granulate. Dark brown or grey above, with three dark cross bands, one between the eyes, the other across the front part of the back, the third on the sacrum; limbs cross-barred; thighs coloured; grey or blackish brown beneath, punctulated with white.

Camaroons, W. Africa.

13. CASSINA.

Cystignathus, sp., *Dum. & Bibr.* viii. p. 418; *Günth. Cat.* p. 30.
Kassina, *Girard, Proc. Ac. Philad.* vi. 1853, p. 421; *Cope, Nat. Hist. Rev.* 1865, p. 115.

Pupil vertical. Tongue heart-shaped, free behind. Vomerine teeth. Tympanum distinct. Fingers free, toes free or slightly webbed, the tips not dilated. Outer metatarsals not separated. Omosternum and sternum with a bony style. Terminal phalanges simple.

Tropical Africa.

This genus is closely allied to the following.

1. Cassina senegalensis.

Cystignathus senegalensis, *Günth. Cat.* p. 30.
Cystignathus senegalensis, *Dum. & Bibr.* p. 418; *Smith, Ill. S. Afr.* pl. 62.
Kassina senegalensis, *Girard, Proc. Ac. Philad.* vi. p. 421.
Cystignathus argyreivittis, *Peters, Arch. f. Naturg.* 1855, p. 55.

Vomerine teeth in two oblique groups between the choanæ. Head as broad as long; snout rounded, without canthus rostralis, its length more than the greatest orbital diameter; interorbital space as broad as the upper eyelid; tympanum slightly distinct, two thirds the width of the eye. Fingers and toes short, quite free; an oval inner, and a very small rounded outer metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum. Skin smooth, slightly granular on the belly and under the thighs. Light brownish or olive above, with large elongate dark-brown spots, generally confluent into three stripes along the back; light olive-brown beneath, the throat blackish in the male. Latter with a large, longitudinally ovate, adhesive disk on the throat, and two introverted external subgular vocal sacs; the throat, on the sides and behind the adhesive disk, strongly and regularly plaited.

Tropical Africa.

a–d. ♂ ♀.	Cape of Good Hope.	Sir A. Smith [P.]
e. Very bad state.	Zambesi.	Sir J. Kirk [P.].

2. Cassina wealii. (Plate XI. fig. 7.)

Vomerine teeth in two small indistinct oblique groups between the choanæ. Head broader than long; snout rounded, without canthus rostralis, as long as the greatest orbital diameter; interorbital space as broad as the upper eyelid; tympanum slightly distinct, half the width of the eye. Fingers slender; toes moderate, slightly though distinctly webbed at the base; two nearly equal-sized metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Skin smooth, belly entirely granular. Dark olive above, with large longitudinal spots, more or less confluent into stripes along the back; brownish beneath; throat blackish in the male. Latter with a large external subgular vocal sac, and a round or transversely ovate adhesive disk on the middle of the throat; no regular plaits on the throat. From snout to vent 40 millim.

Kaffraria.

a. Several spec., ♂ ♀.	Vleis, Kaffraria.	F. P. M. Weale, Esq. [P.].

14. HYLAMBATES.

Hylambates, *A. Dum. Ann. Sc. Nat.* (3) xix. p. 162; *Cope, Nat. Hist. Rev.* 1865, p. 115.
Leptopelis, *Günth. Cat.* p. 89; *Cope, l. c.* p. 116.
? Petropedetes, *Reichenow, Arch. f. Naturg.* 1874, p. 290.

Pupil erect. Tongue free and more or less deeply notched behind. Vomerine teeth. Tympanum distinct. Fingers free or webbed; toes more or less webbed, the tips dilated. Outer metatarsals united. Omosternum and sternum with a bony style. Terminal phalanges claw-like, swollen at the base.

Tropical Africa.

The claw-shaped terminal phalanges constitute a character which distinguishes this genus at once from any other of the family *Ranidæ*. This character and the vertical pupil separate it from *Polypedates*, to which it bears some resemblance.

In Mr. Cope's classification this genus is split into two, viz. *Hylambates* and *Leptopelis*, falling into two different groups of the family *Ranidæ*. *Leptopelis* is said to differ from *Hylambates* in the claw-shaped distal phalanges. Upon what species the former is founded is not stated; but I suppose it is intended for *Hyla aubryi*. I have not been able to recognize the difference pointed out by Mr. Cope, all the species I have examined (*H. aubryi* as well as *H. marmoratus*) having the distal phalanges as in the genus *Hyla*.

Synopsis of the Species.

I. Vomerine teeth between the choanæ.

A. Toes not half webbed; fingers free; inner metatarsal tubercle large, compressed.

Toes scarcely webbed; throat granulate; fingers free	1. *bocagii*, p. 133.
Toes scarcely webbed; fingers webbed at the base	2. *anchietæ*, p. 133.
Toes one-third webbed; throat smooth; fingers free	3. *viridis*, p. 134.

B. Toes at least half webbed.

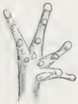
Fingers free, toes half webbed; tibio-tarsal articulation not reaching the eye	4. *maculatus*, p. 134.
Fingers slightly, toes half webbed	5. *aubryi*, p. 135.
Fingers one-third, toes half webbed; tympanum three fourths the diameter of the eye	6. *natalensis*, p. 135.
Fingers one-third, toes three-fourths webbed; tympanum three fourths the diameter of the eye	7. *rufus*, p. 136.
Fingers two-thirds, toes entirely webbed; tympanum one third the diameter of the eye	8. *palmatus*, p. 136.
Fingers free (?), toes half webbed; tympanum one third the diameter of the eye	9. *dorsalis*, p. 137.

II. Vomerine teeth behind the level of the choanæ.

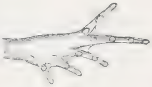
Fingers free, toes half webbed	11. *cameronensis*, p. 137.
Fingers webbed at the base, toes two-thirds webbed	10. *microtympanum*, p. 137.

1. Hylambates bocagii.

Cystignathus bocagei, *Günth. Proc. Zool. Soc.* 1864, p. 481, pl. 33. f. 2.



Lower surface of hand.



Lower surface of foot.

Vomerine teeth in two small groups between the choanæ. Tympanum somewhat more than half the width of the eye. Fingers free, toes one-fourth webbed, the tips dilated into very small disks; a large, compressed, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the tympanum. Skin smooth above; the entire lower surfaces granular. Uniform brown above. Male with an internal subgular vocal sac.

W. Africa.

a–b. ♂ ♀.	W. Africa.	Lisbon Museum.

2. Hylambates anchietæ.

Hylambates anchietæ, *Bocage, Jorn. Sc. Lisb.* 1873, p. 227.

Vomerine teeth in two small groups, close together. Tympanum smaller than the eye, scarcely distinct. Fingers webbed at the base; toes scarcely webbed, the fourth very long; tips of fingers and toes dilated into well-developed disks; a large metatarsal tubercle. Skin smooth above; belly and lower surface of thighs granular. Upper surfaces ashy green; flanks brownish, with a few round yellowish spots; upper lip white-margined; a brown, white-edged line extends from the tip of the snout, through the eye, along each side of the body to the vent; near the latter it sends up a short perpendicular branch, dilated at the top. Hinder side of thighs brown, with a few small yellow spots. Yellowish white beneath.

Mossamedes, W. Africa.

3. **Hylambates viridis.** (Plate XII. fig. 5.)

Hylambates viridis, *Günth. Proc. Zool. Soc.* 1868, p. 487.

Vomerine teeth in two small groups between the choanæ. Tympanum half the width of the eye. Fingers free, toes one third-webbed, the tips dilated into small disks; a large, compressed, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. Skin smooth, granular on the belly and under the thighs. Greenish or brownish above, immaculate or with two or four longitudinal dark-brown stripes.

W. Africa.

a. ♀.	W. Africa.	(Type.)
b. ♀.	W. Africa.	
c. ♀.	Angola.	J. J. Monteiro.
d. ♀.	—— ?	Sir A. Smith [P.].
e. ♀.	—— ?	College of Surgeons.

4. **Hylambates maculatus.**

Hylambates maculatus, *A. Dum. Ann. Sc. Nat.* (3) xix. p. 165, pl. 7; *Peters, Arch. f. Naturg.* 1855, p. 56.

Vomerine teeth in two small groups between the choanæ. Tympanum nearly half the width of the eye. Fingers free, toes half webbed; disks moderate; a very small, blunt, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. Skin smooth, granular on the belly and under the thighs. Upper parts olive, with large insuliform dark-brown, light-edged spots; limbs cross-barred. Male with two subgular vocal sacs, and a small adhesive disk on the throat.

E. Africa.

a. ♀.	Rovuma Bay.	Sir J. Kirk [P.].
b. ♂.	Shiré Valley, Zambesi.	
c. ♀.	Mozambique.	Prof. Peters [P.].
d–f. ♂ ♀.	Zanzibar.	Sir J. Kirk [C.].

5. Hylambates aubryi.

Leptopelis aubryi, *Günth. Cat.* p. 89.
Leptopelis natalensis, part., *Günth. l. c.* p. 144.
Hyla punctata, *Hallow. Proc. Ac. Philad.* vii. p. 193.
—— aubryi, *A. Dum. Rev. et Mag. Zool.* 1856, p. 561.
Hylambates aubryi, *A. Dum. Arch. Mus.* x. p. 229, pl. 18. f. 3.

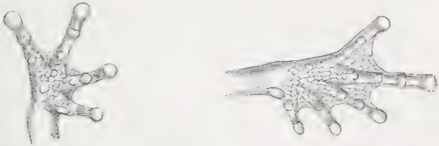
Vomerine teeth in two small groups between the choanæ. Tympanum half the width of the eye. Fingers slightly, toes half webbed; disks well developed; a rather strong, compressed, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or beyond. Skin smooth above, granular beneath. Brownish above, with a dark triangular spot between the eyes, and some irregular dark spots on the back.

W. Africa.

a. ♀.	Ashantee.	
b. ♀.	Gaboon.	
c. ♀.	Coast of Guinea.	Sir A. Smith [P.].
d. ♀.	W. Africa.	Sir A. Smith [P.].
e. ♀.	Africa.	

6. Hylambates natalensis.

Leptopelis natalensis, *Günth. Cat.* p. 144.
Polypedates natalensis, *Smith, Ill. S. Afr., Rept., App.* p. 25.



Lower surface of hand. Lower surface of foot.

Vomerine teeth in two small groups between the choanæ. Tympanum three fourths the width of the eye. Fingers one-third, toes half webbed; disks well developed; a rather small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above, granular beneath. Brownish or olive above, with a greenish or dark brown, black-edged stripe from the tip of the snout through the eye to the shoulder; large insuliform spots on the sides and irregular cross bands on the limbs.

S. Africa.

a. ♀.	Natal.	Sir A. Smith [P.]. (Type.)
b, c. ♀.	Port Natal.	T. Ayres, Esq. [P.].
d. ♀.	Africa.	Sir A. Smith [P.].

7. Hylambates rufus.

Leptopelis rufus, *Reichenow, Arch. f. Naturg.* 1874, p. 291.
Hylambates notatus, *Buchh. & Peters, Mon. Berl. Ac.* 1875, p. 205, pl. 2. f. 1.

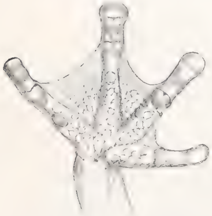
Vomerine teeth in two small groups between the choanæ. Tympanum three fourths the width of the eye. Fingers one-third, toes three-fourths webbed; disks well developed; a moderate, slightly compressed, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or beyond. Skin shagreened above, granular beneath. Brown or purplish above, immaculate or with dark symmetrical markings, viz. a cross line between the eyes and a large triangular spot on the middle of the back, and indistinct cross bars on the limbs; upper lip white; flanks with black reticulations, or white black-edged spots.

W. Africa.

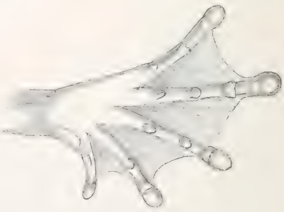
a–b. ♀.	Gaboon.	H. Ansell, Esq. [P.].
c. Yg.	Cameroons.	Mr. Rutherford [C.].
d, e. ♀.	Cameroons.	
f. ♀.	Fernando Po.	Mr. Fraser [C.].

8. Hylambates palmatus.

Hylambates palmatus, *Peters, Mon. Berl. Ac.* 1868, p. 453, pl. 2. f. 2.



Lower surface of hand.



Lower surface of foot.

Vomerine teeth in two small groups between the choanæ. Tympanum one third the width of the eye. Fingers two-thirds, toes entirely webbed; disks large; a small, blunt, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin shagreened above, granular beneath. Uniform purplish brown above.

W. Africa.

a. ♀	Cameroons.

9. Hylambates dorsalis.

Hylambates dorsalis, *Peters, Mon. Berl. Ac.* 1875, p. 209, pl. 3. f. 5.

Vomerine teeth in two small groups between the choanæ. Tympanum one third the width of the eye. Fingers free (?), toes half webbed; disks moderate; inner metatarsal tubercle small. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin of upper surfaces with a few slight folds and small scattered tubercles; belly and under surface of thighs granular. Dark brown above, with a broad light band, narrowed posteriorly, along the middle of the back; limbs cross-barred.

Yoruba, Lagos.

10. Hylambates microtympanum.

Hylambates microtympanum, *Boettg. Zool. Anz.* 1881, p. 47, *and Abh. Ver. Brem.* vii. p. 185.

Vomerine teeth in two oblique groups extending beyond the level of the hinder edge of the choanæ. Tympanum one third the width of the eye, slightly distinct. Outer fingers webbed at the base; toes two-thirds webbed; disks small. Skin smooth, granular on the belly and under the thighs. Grey above, elegantly variegated with blackish, white-edged confluent spots; sides spotted and speckled with white; limbs cross-barred; entirely brown beneath.

Madagascar.

11. Hylambates? cameronensis.

Petropedetes cameronensis, *Reichenow, Arch. f. Naturg.* 1874, p. 290, pl. ix. f. 2.
Platymantis cameronensis, *Peters, Mon. Berl. Ac.* 1875, p. 211.

Vomerine teeth in two small groups behind the level of the choanæ. Tympanum half the width of the eye. Fingers free, toes half webbed; disks moderate; inner metatarsal tubercle small. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin of back with small tubercles and four longitudinal glandular folds; smooth beneath. Reddish brown above, with black markings.

Bambia, Cameroons.

15. HYLIXALUS.

Hyloxalus, *Espada, Jorn. Sc. Lisb.* iii. 1870, p. 59.

Pupil horizontal. Tongue heart-shaped, free behind. Vomerine teeth none. Tympanum distinct. Fingers free, toes webbed, dilated into distinct disks, each of which exhibits two leathery dermal scales on the upper side, separated by a fissure. Outer metatarsals

united. Omosternum with a bony style; sternum membranous, rudimentary. Terminal phalanges T-shaped.
Ecuador.

1. Hylixalus bocagii.

Hyloxalus bocagei, *Espada, Jorn. Sc. Lisb.* iii. 1870, p. 59, *and Viaj. Pacif., Vertebr.* pl. 3. f. 2.

Snout depressed, projecting, truncate; canthus rostralis angular; loreal region nearly vertical; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum half the width of the eye. First finger not extending beyond second; toes nearly entirely webbed; subarticular tubercles small; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin quite smooth; a fold from the eye to the shoulder. Dark olive-brown above; lower surfaces white, immaculate or dotted with brown. Male with a subgular vocal sac.
Ecuador.

a–b. ♂ ♀.	Sarayacu.	Mr. Buckley [C.].
c–e. ♀.	Canelos.	Mr. Buckley [C.].

2. Hylixalus fuliginosus.

Hyloxalus fuliginosus, *Espada, Jorn. Sc. Lisb.* iii. 1870, p. 59, *and Viaj. Pacif., Vertebr.* pl. 3. f. 1.

Differs from the preceding in its half-webbed toes and granular upper surfaces. Brown above, white beneath, except the throat.
Ecuador.

16. PROSTHERAPIS.

Prostherapis, *Cope, Proc. Ac. Philad.* 1868, p. 137.

Pupil horizontal. Tongue elliptic, entire, free behind. Vomerine teeth none. Tympanum distinct or indistinct. Fingers free; toes nearly free, dilated into distinct disks, each of which exhibits two leathery dermal scales on the upper side, separated by a fissure. Outer metatarsals united. Omosternum with a bony style; sternum membranous, rudimentary. Terminal phalanges T-shaped.
S. America.

1. Prostherapis inguinalis.

Prostherapis inguinalis, *Cope, l. c.*

Snout depressed, with angular canthus rostralis, truncate from above; loreal region nearly vertical; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum concealed. First finger longer than second; toes with a slight rudiment of web; subarticular tubercles small; two very small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin tubercular above. Dark brown above, sides blackish; upper lip white; lower surfaces variegated with grey and white. Male with a subgular vocal sac.

Colombia; Ecuador; Demerara.

a. ♂.	Sarayacu.	Mr. Buckley [C.].
b. ♀.	Canelos.	Mr. Buckley [C.].
c. ♀.	Demerara.	Zool. Soc.

In the latter specimen, the axillæ and a spot on the loin are of a beautiful pink colour; the belly and the inferior surface of the limbs are whitish, brown-spotted.

2. Prostherapis whymperi.

Snout depressed, projecting, truncate, with angular canthus rostralis; loreal region nearly vertical; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum perfectly distinct, two thirds the width of the eye. First and second fingers equal; toes quite free; disks of fingers and toes small; subarticular and inner metatarsal tubercles indistinct; no outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the anterior border of the eye. Skin everywhere perfectly smooth. Blackish; throat and belly marbled with grey; lower surface of hind limbs greyish, of arms whitish. Male with an internal vocal sac. From snout to vent 24 millim.

Ecuador.

a. ♂.	Tanti (2000 feet).	Edward Whymper, Esq. [C.].

17. PHYLLODROMUS.

Phyllodromus, *Espada, Viaj. Pacif., Vertebr.* pl. 3. f. 3 (no description).

Pupil horizontal. Tongue elliptic, entire and free behind. Vomerine teeth none. Tympanum distinct. Fingers free, toes nearly free, dilated into distinct disks, each of which exhibits two leathery dermal scales on the upper side, separated by a fissure. Outer metatarsals united. Omosternum cartilaginous; sternum a small cartilaginous plate. Terminal phalanges T-shaped.

Ecuador.

1. Phyllodromus pulchellus.

Phyllodromus pulchellum, *Espada, l. c.* (no description).

Snout depressed, projecting, truncate from above; canthus rostralis angular; loreal region vertical; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum rather more than half the width of the eye. First and second fingers equal; toes with a slight rudiment of web; subarticular tubercles small; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth. Brownish above, maculated with dark brown; sides dark brown; upper lip white; a white stripe from eye to groin; whitish beneath, immaculate.

Ecuador.

a. ♀. Intac. Mr. Buckley [C.].

18. COLOSTETHUS.

Colostethus, *Cope, Proc. Ac. Philad.* 1866, p. 130, *and Journ. Ac. Philad.* (2) vi. 1867, p. 197.

Pupil horizontal. Tongue elliptic, entire and free behind. Vomerine teeth none. Tympanum distinct. Fingers and toes free, the tips dilated into distinct disks. Outer metatarsals united. No omosternum; sternum rudimentary, membranous. Terminal phalanges with transverse limb.

Colombia.

1. Colostethus latinasus.

Phyllobates latinasus, *Cope, Proc. Ac. Philad.* 1863, p. 48.
Colostethus latinasus, *Cope, eod. loc.* 1866, p. 130.

Head elongate; snout prominent, broad and concavely truncate, as long as the greatest orbital diameter. Tympanum one fourth extent of orbit. A dermal fold on the tarsus; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the anterior border of the orbit. Above brown; a black band across end of snout and loreal region, through eye to groin, pale-bordered above on the snout, and interrupted by an oblique white line from the femur; femur dark posteriorly, tibia cross-banded; beneath pale, immaculate.

Truando region, Colombia.

2. DENDROBATIDÆ.

Hylaplesidæ, *Günth. Cat. Batr. Sal.*; *Mivart, Proc. Zool. Soc.* 1869.
Dendrobatidæ, *Cope, Nat. Hist. Rev.* 1865, *and Journ. Ac. Philad.* (2) vi. 1867.

Teeth none; diapophyses of sacral vertebra not dilated.

This family includes two genera. But for the absence of teeth, these forms agree perfectly with the *Ranidæ*, especially the last four genera. Between *Prostherapis* and *Dendrobates* the analogy is so great in every respect, anatomical as well as external, that, were it not for the presence of maxillary teeth in the former, both genera might be united.

1. MANTELLA.

Pupil horizontal. Tongue elongate, free and distinctly nicked behind. Tympanum distinct. Fingers and toes free, the tips dilated into regular disks. Outer metatarsals united. Omosternum and sternum with a bony style. Terminal phalanges T-shaped.

Madagascar.

1. Mantella betsileo.

Dendrobates betsileo, *Grandid. Ann. Sc. Nat.* (5) xv. art. 20, p. 11.

Snout subacuminate, as long as the diameter of the eye, with angular canthus rostralis; loreal region vertical; interorbital space broader than the upper eyelid; tympanum more or less distinct, about half the width of the eye. Fingers rather slender, first not extending as far as second; toes moderate, tips of fingers and toes dilated into small disks; subarticular tubercles distinct; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the eye or the tip of the snout. Skin of back minutely granulate; a more or less distinct fold from the eye to the shoulder. Upper surface of head and back uniform light olive, sides and lower surfaces black, the two colours sharply defined; limbs dark olive, indistinctly barred with darker; a light line on the upper lip, extending to the base of the arm; lower surfaces spotted with light olive.

Madagascar.

a–d. ♀ & hgr.	Mohambo.

2. Mantella ebenaui.

Dendrobates ebenaui, *Boettg. Zool. Anz.* 1880, p. 281.

Head short, subtriangular; tympanum half the size of the eye. First and second fingers equal; tips of fingers and toes dilated into very small disks; subarticular tubercles well developed; two metatarsal tubercles. Skin of back minutely granulate. Above with a broad light zone—silvery in the male, greenish golden in the female,—well defined from the black colour of the sides; limbs dark grey, with rather indistinct black spots and stripes; a silvery-white line round the upper lip, extending to the base of the arm; beneath black, white-spotted.

Nossi Bé.

3. Mantella madagascariensis.

Dendrobates madagascariensis, *Grandid. l. c.* p. 10.

Skin finely shagreened. Male uniform bluish black; belly with light blue spots; thighs and inner side of legs beautiful red. Female deep black, with a light-green spot at the base and in front of the limbs; belly with light blue spots; inner side of legs beautiful red.

Madagascar.

2. DENDROBATES.

Hylaplesia, sp., *Boie, Isis*, 1827, p. 294; *Tschudi, Batr.* p. 70.
Dendrobates, *Wagl. Syst. Amph.* p. 202; *Dum. & Bibr.* viii. p. 649; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 197.
Hylaplesia, *Günth. Cat.* p. 124.

Pupil horizontal. Tongue elongate, entire and free behind. Tympanum more or less distinct. Fingers and toes free, the tips dilated into regular disks. Outer metatarsals united. Omosternum with a weak, semiossified style; sternum cartilaginous. Terminal phalanges T-shaped.

Tropical America.

Synopsis of the Species.

First finger not extending so far as second; skin smooth; tarso-metatarsal articulation not reaching the tip of the snout ..	1. *tinctorius*, p. 142.
Tympanum much smaller than the digital disks; skin smooth	2. *typographus*, p. 143.
First finger extending beyond second; skin of back tubercular; snout longer than the diameter of the eye	3. *trivittatus*, p. 144.
First finger not extending so far as second; tarso-metatarsal articulation reaching beyond the tip of the snout; skin smooth .	4. *lugubris*, p. 145.
First finger longer than second; skin smooth	5. *talamancæ*, p. 145.
First finger extending beyond second; skin of back tubercular; snout not longer than the diameter of the eye..........	6. *parvulus*, p. 145.
First finger extending beyond second; tympanum one fifth the size of the eye; skin areolate on the upper surfaces	7. *labialis*, p. 146.

1. Dendrobates tinctorius.

Hylaplesia tinctoria, *Günth. Cat.* p. 125.

Linn. Amœn. i. p. 566.
Calamita tinctorius, *Schneid. Hist. Amph.* p. 175; *Merr. Tent.* p. 169.
Rana tinctoria, *Shaw, Zool.* iii. p. 135.
Hyla tinctoria, *Latr. Rept.* ii. p. 170; *Daud. Rain.* p. 25, pl. 8, *and Rept.* viii. p. 48; *Cuv. R. A.*
Dendrobates tinctorius, *Wagl. Syst. Amph.* p. 202; *Dum. & Bibr.* p. 252, pl. 90. f. 1; *Steindachn. Verh. zool.-bot. Ges. Wien.* 1864, p. 260, pl. 15. f. 2, & pl. 13. f. 1; *Keferst. Götting. Nachr.* 1867, p. 359; *Brocchi, Bull. Soc. Philom.* (7) i. p. 194.

Hylaplesia tinctoria, *Boie, Isis,* 1827, p. 294; *Tschudi, Batr.* p. 70.
Dendrobates histrionicus, *Berth. Götting. Nachr.* 1845, p. 43, *and Abhandl.* p. 15, pl. 1. f. 8.
Phyllobates auratus, *Girard, U.S. Astron. Exped.* ii. p. 209.
Hylaplesia aurata, *Cope, Proc. Ac. Philad.* 1863, p. 49.
Phyllobates chocoensis, *Posada Arango, Rev. et Mag. Zool.* 1872, pl. 27.

Snout truncate, longer than the diameter of the eye; loreal region vertical; interorbital space broader than the upper eyelid; tympanum more or less distinct, about half the diameter of the eye. First finger not extending so far as second; disks of fingers large, truncate, of toes smaller; subarticular tubercles not very distinct; two scarcely distinct metatarsal tubercles; sometimes a rather indistinct tubercle on the middle of the tarsus. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Skin smooth. Male with a subgular vocal sac.

Tropical America.

The following specimens may be divided into five varieties of coloration:—

A. Uniform black.

a–d, e. ♂ ♀.	Panama.	Madame Pfeiffer [C.].
f, g. ♂.	Santarem.	Mr. Wickham [C.].

B. Upper surfaces uniform grey; sides and inferior surfaces uniform black.

h, i. ♂ ♀.	Para.	R. Graham, Esq. [P.].
k. ♀.	Para.	

C. Grey, with large black blotches.

l. ♂.	Isthmus of Darien.	Zool Soc.

D. Above black, with two or three white (or pink) longitudinal stripes, sometimes one or two cross streaks between; beneath grey, black-spotted.

m. ♀.	Cayenne.	
n. Yg.	Para.	R. Graham, Esq. [P.].
o–p, q–r. Yg.	Sarayacu, Ecuador.	Mr. Buckley [C.].

E. Black; above with white stripes and spots; beneath spotted or marbled with white.

s. Hgr.	Santarem.	Mr. Wickham [C.].
t–u. Yg.	Cayaria.	W. Davis [C.]. Messrs. Veitch [P.].

2. Dendrobates typographus.

Dendrobates typographus, *Keferst. Götting. Nachr.* 1867, p. 360, *and Arch. f. Naturg.* 1868, p. 298, pl. 9. f. 7; *Cope, Journ. Ac. Philad.* (n. s.) viii. part 2, p. 102.
—— ignitus, *Cope, Proc. Ac. Philad.* 1874, p. 68.

Snout obtuse; canthus rostralis rounded. Tympanum very small.

Disks of fingers much larger than the tympanum. Skin quite smooth. Greyish or vermilion-red, with or without small dark markings on the back; all four limbs black.

Central America.

3. Dendrobates trivittatus.

Hylaplesia picta, *Günth. Cat.* p. 125.
Hyla trivittata, *Spix, Spec. Nov. Test. Ran.* p. 35, pl. 9. f. 1.
—— nigerrima, *Spix, l. c.* p. 36, pl. 9. f. 2.
Dendrobates nigerrimus, *Wagl. Syst. Amph.* p. 202; *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 257, pl. 13. f. 2.
—— trivittatus, *Wagl. l. c.*; *Peters, Mon. Berl. Ac.* 1872, p. 213; *Cope, Proc. Ac. Philad.* 1874, p. 129.
Hylaplesia picta, *Tschudi, Batr.* p. 71.
Dendrobates obscurus, *Dum. & Bibr.* p. 655; *Guichen. An. Nouv. Amér. mérid.* p. 87, pl. 18. f. 2.
—— pictus, *Dum. & Bibr.* p. 656; *Guichen. in Gay, Hist. Chile, Zool.* ii. p. 119.

Snout truncate, a little longer than the diameter of the eye; loreal region vertical; interorbital space broader than the upper eyelid; tympanum more or less distinct, about half the diameter of the eye. Fingers slender, first extending slightly beyond second; toes slender; tips of fingers and toes dilated into small disks; subarticular tubercles distinct; two scarcely prominent metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches far beyond the tip of the snout. Back tubercular; a scarcely prominent glandular lateral fold. Black above and below. Male with a subgular vocal sac.

Tropical America.

The following specimens belong to three varieties of coloration:—

A. Uniform black.

a. ♀.	Brazil.	

B. A whitish line along the side of the back, the outer edge of the upper eyelid, and the canthus rostralis, confluent with its fellow on the end of the snout; another whitish line on the upper lip, commencing from the vertical of the front edge of the eye, extending to the arm; sides, belly, and lower surface of limbs with whitish spots.

b. ♂.	Demerara.	
c. ♀.	Vryheids Lust, Demerara.	W. T. Turner.
d. ♀.	Surinam.	Mr. Bartlett [C.].
e. ♂.	Surinam.	Hr. Kappler [C.].
f–g. ♂.	Para.	
h. ♀.	Cayaria.	W. Davis, Esq. [C.]. Messrs. Veitch [P.].

C. Forehead whitish; three whitish streaks along the back, the two outer continued on the upper surface of the hind limbs; a whitish line on the upper lip, as in var. B; loins and axilla with large whitish spots; a few small whitish spots under the limbs.

i-k. ♂ ♀. Chyavetas, E. Peru.

D. As in var. B, but with white spots on the back; belly whitish, marbled with brown. Perhaps a distinct species.

l. Hgr. S. Domingo.

4. Dendrobates lugubris.

Dendrobates lugubris, *Schmidt, Denkschr. Ac. Wien*, 1858, p. 250, pl. 2. f. 14.

Allied to *D. trivittatus*. It differs from the latter in the proportions of the fingers (the first not extending as far as the second) and the larger disks. The tarso-metatarsal articulation reaches a little beyond the tip of the snout. Skin smooth. Black; a whitish line along the side of the back, the outer edge of the upper eyelid, and the canthus rostralis, confluent with its fellow on the end of the snout; lower surfaces marbled with whitish; a whitish line from below the eye to the shoulder. Size very small.

Colombia.

a. ♂. Bogotá. Mr. Marks [P.].

5. Dendrobates talamancæ.

Dendrobates talamancæ, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 102, pl. 23. f. 6.

Allied to *D. lugubris*. First finger longer than the second. Heel marking the middle of the orbit. Skin entirely smooth. Colour brown above, separated by a border of light pigment from the white of the lower surfaces; top of muzzle, and a band from the eye to groin on each side, yellowish.

Costa Rica.

6. Dendrobates parvulus. (Plate XII. fig. 6.)

Snout truncate, as long as the diameter of the eye; loreal region vertical; interorbital space a little broader than the upper eyelid; tympanum moderately distinct, nearly half the diameter of the eye. Fingers slender, first extending beyond second; toes slender; tips of fingers and toes dilated into rather small disks; subarticular tubercles distinct; two scarcely prominent metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches far beyond the tip of the snout. Back tubercular. Black; upper surfaces closely punctated with whitish, most distinctly on the head and the front part of the back; lower surfaces marbled with bluish grey. Male with a subgular vocal sac. From snout to vent 22 millim.

Ecuador.

a–b. ♂.	Sarayacu.	Mr. Buckley [C.].
c. ♀.	Canelos.	Mr. Buckley [C.].

7. Dendrobates labialis.

Dendrobates labialis, *Cope, Proc. Ac. Philad.* 1874, p. 129.

Snout flat, moderately elongate, and broadly truncate, as long as the diameter of the eye; tympanum one fifth the size of the eye. First finger longer than second. Skin minutely areolate on the upper surfaces. Upper lip pale-banded, the band extending through the axilla and meeting its fellow at the pubis.

Nauta, Upper Amazon.

The following genus is referred with doubt to this family:—

Stumpffia, Boettger, Zool. Anz. 1881, p. 360.

"Habit of *Dendrobates*, but without digital disks. Tongue subfungiform, divided into two subequal parts by a deep transverse groove; the front part triangular, adherent, free on the sides only; the hind part free everywhere, except in front, thick, orbicular, slightly pointed behind, entire. No maxillary nor palatine teeth. Tympanum, eustachian tubes, and parotoids not visible. Fingers free, the tips truncate; the tips of the third finger and of the median toe slightly dilated. No metatarsal tubercles or spur."

S. psologlossa, Boettg. l. c.—Nossi Bé, Madagascar.

3. ENGYSTOMATIDÆ.

Phryniscidæ, Brachycephalidæ, part., Rhinodermatidæ, Engystomatidæ, part., Bufonidæ, part., Micrhylidæ, *Günth. Cat. Batr. Sal.*
Rhinophrynidæ, part., Engystomidæ, Brachymeridæ, part., *Cope, Nat. Hist. Rev.* 1865.
Brevicipitidæ, Engystomidæ, Phryniscidæ, Hemisidæ, *Cope, Journ. Ac. Philad.* (2) vi. 1867.
Phryniscidæ, Bufonidæ, part., Xenorhinidæ, Engystomidæ, *Mivart, Proc. Zool. Soc.* 1869.

Maxillary teeth none; diapophyses of sacral vertebra dilated.

The members of this family exhibit great differences in the structure of the sternal apparatus. Whilst *Rhinoderma* and *Phryniscus* approach the preceding families—the former genus being provided with a cartilaginous omosternum, a part totally absent in all other genera of the present family—*Engystoma*, *Callula*, and others show, in the absence of precoracoids, a structure which is not met with in any other family but that of *Dyscophidæ*. *Hemisus* and *Breviceps* are also remarkable forms, the proportions in the latter and the position in the former of the bones of the sternal apparatus being unlike what obtains in any other Frog.

The vertebræ are procœlian and without ribs; the coccyx is attached by two condyles, except in the genus *Breviceps*, where it is confluent with the sacrum.

None of the genera have a fronto-parietal fontanelle.

The distal phalanges may be simple or T-shaped.

This family includes terrestrial, aquatic, and burrowing types, but no arboreal—*Callula*, *Brachymerus*, and others, generally regarded as "tree-frogs," being merely aquatic or terrestrial, in spite of their digital dilatations.

For the purpose of burrowing, either the hind pair of limbs (*Hypopachus*, *Glyphoglossus*, *Cacopus*, *Breviceps*, &c.), or the front pair (*Hemisus*), are particularly strengthened and provided with corneous sheaths.

In the last-named genera the mouth is very narrow, and those Frogs may be considered "ant-eaters," similarly as the Bufonid genus *Rhinophrynus*.

In more than half of the genera the pupil is erect.

Synopsis of the Genera.

I. Precoracoids present; coracoids moderate, horizontal.

Pupil horizontal; tongue subtriangular; a cartilaginous omosternum.
1. **Rhinoderma**, p. 148.

Pupil horizontal; tongue elliptical; no omosternum; palate without ridges .... 2. **Phryniscus**, p. 149.

Pupil horizontal; tongue elliptical; a dorsal bony shield.
3. **Brachycephalus**, p. 156.

Pupil erect; tongue elliptical; palate without ridges.
4. **Melanobatrachus**, p. 156.

Pupil horizontal; tongue heart-shaped.
5. **Sphenophryne**, p. 157.

Pupil horizontal; tongue elliptical; a denticulated dermal ridge across the palate between the choanæ, and another in front of the œsophagus .... 6. **Calophrynus**, p. 157.

Pupil round; tongue large; toes free; anterior portion of the sclerotica ossified .... 7. **Stereocyclops**, p. 158.

Pupil erect; tongue elliptical; a dermal ridge across the palate between the choanæ, and another in front of the œsophagus; toes webbed at the base .... 8. **Hypopachus**, p. 159.

II. No precoracoids.

Pupil erect; tongue elliptical; tympanum hidden; toes free.
9. **Engystoma**, p. 160.

Pupil erect; tongue elliptical; tympanum hidden; toes more or less webbed........................ 10. **Microhyla**, p. 163.

Pupil erect; tongue oblong; palatine bones forming an acute ridge; tympanum hidden .... 11. **Callula**, p. 167.

Tongue heart-shaped; palatine bones each with two curved teeth; tympanum distinct .... 12. **Xenobatrachus**, p. 172.

Pupil erect; tongue large, oblong, nicked behind; tympanum hidden; toes free .... 13. **Phrynomantis**, p. 172.

Pupil erect; tongue oval; two small bony prominences between the choanæ; toes webbed at the base... 14. **Cacopus**, p. 173.

Pupil erect; tongue divided into two lateral halves by a deep groove. 15. **Glyphoglossus**, p. 175.

III. Precoracoids present; coracoids very much dilated.

Pupil horizontal; no palatine teeth.. 16. **Breviceps**, p. 176.

Palatine teeth .... 17. **Rhombophryne***, p. 177.

IV. Precoracoids present; coracoids directed backwards.

Pupil erect .... 18. **Hemisus**, p. 178.

1. RHINODERMA.

Rhinoderma, *Dum. & Bibr.* viii. p. 657; *Günth. Cat.* p. 48; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 196.

Pupil horizontal. Tongue subtriangular, entire or slightly nicked and free behind. Vomerine teeth none. Tympanum hidden, or slightly distinct. Fingers with a slight rudiment of web; toes incompletely webbed, the tips not dilated. Outer metatarsals united. Coracoids and precoracoids parallel; a cartilaginous omosternum; a cartilaginous sternum. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

Chili.

1. Rhinoderma darwinii.

Rhinoderma darwinii, *Günth. Cat.* p. 48.

Rhinoderma darwinii, *Dum. & Bibr.* p. 659; *Bell, Zool. Beagle, Rept.* p. 48, pl. 20. f. 1 & 2; *Guichen. in Gay, Hist. Chile*, p. 122, pl. 7. f. 1–10; *Girard, U.S. Expl. Exped., Herp.* p. 71; *Cunningh. Trans. Linn. Soc.* xxviii. p. 468; *Espada, Viaj. Pacif., Vert.* p. 129.

Snout triangular, ending in a dermal lobe; canthus rostralis angular; loreal region vertical; interorbital space broader than the upper eyelid. Fingers moderate, pointed, first shorter than second; toes rather slender, pointed, one-third webbed; subarticular tubercles of fingers and toes indistinct; a very small inner metatarsal tubercle. The hind limb being carried forwards along the body, the metatarsal tubercle reaches the eye, or somewhat beyond. Skin smooth, granular on the belly and under the thighs; a more or less distinct, narrow, glandular lateral fold; heel with a triangular dermal appendage. Brown above; black below, with large white markings; sometimes the throat and chest white, dotted with blackish. Male with a subgular vocal sac.

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* Sternal structure unknown, but the animal stated to be closely allied to *Breviceps*.

Chili.

a–c. ♂.	Chili.	C. Darwin, Esq. [P.].
d, e. ♀.	Chili.	
f. ♀.	Isle of Quehuy, Chiloe.	Dr. Cunningham [P.].
g. Skel., ♀.	S. America.	Sir A. Smith [P.].

2. PHRYNISCUS.

Phryniscus, *Wiegm. Nov. Act.* 1834, p. 264; *Günth. Cat.* p. 43; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 196.
Chaunus, sp., *Tschudi, Batr.* p. 87.
Phryniscus, sp., *Dum. & Bibr.* viii. p. 722.
Atelopus, *Dum. & Bibr.* viii. p. 660; *Günth. Cat.* p. 48; *Cope, l. c.* p. 195.
Phrynidium, *Martens, Nomenc. Rept. Mus. Zool. Berol.* 1856, p. 40; *Cope, l. c.* p. 196.
Hylæmorphus, (*Fitzing.*) *Schmidt, Denkschr. Ac. Wien*, 1858, p. 255.
Phirix, *Schmidt, l. c.* p. 256.

Pupil horizontal. Tongue elliptical, entire and free behind. Palate smooth. No tympanic disk. Fingers free or webbed at the base; toes more or less webbed, the tips not dilated into regular disks. Outer metatarsals united. Coracoids and precoracoids more or less divergent, connected by the epicoracoid cartilage; no omosternum; sternum cartilaginous. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

Tropical America.

Synopsis of the Species.

I. First toe perfectly distinct.

A. Toes not half webbed.

Snout short, rounded	1. *nigricans*, p. 150.
Snout much produced, truncate	2. *proboscideus*, p. 150.

B. Toes at least half webbed.

Head as broad as long; snout longer than the diameter of the eye; toes broadly webbed	3. *lævis*, p. 151.
Snout not longer than the diameter of the eye; toes entirely webbed	4. *seminiferus*, p. 152.

Habit slender; tibio-tarsal articulation not reaching beyond the posterior corner of the eye; skin smooth . . . . 5. *varius*, p. 152.

Habit slender; tibio-tarsal articulation marking the front of the orbit . . . . 6. *longirostris*, p. 153.

Habit slender; tibio-tarsal articulation marking the eye; toes half webbed; skin warty . . . . 9. *cruciger*, p. 154.

Habit slender; tibio-tarsal articulation marking the eye; toes nearly entirely webbed; skin smooth . . . . 10. *elegans*, p. 155.

Habit very slender; tibio-tarsal articulation reaching beyond the eye; toes half webbed; skin smooth . . . . 11. *bibronii*, p. 155.

II. First toe quite indistinct.

Head as broad as long; yellow and brown above . . . . 7. *flavescens*, p. 153.

Head a little longer than broad; black and green above . . . . 8. *pulcher*, p. 154.

1. Phryniscus nigricans.

Phryniscus nigricans, *Günth. Cat.* p. 43.

Phryniscus nigricans, *Wiegm. Nov. Act.* 1834, p. 264; *Dum. & Bibr.* p. 723; *Bell, Zool. Beagle,* p. 49, pl. 20. f. 3–5; *D'Orbigny, Voy. Amér. mér., Rept.* p. 11, pl. 15. f. 1–4; *Espada, Viaj. Pacif., Vert.* p. 115, pl. 1. f. 9.

Chaunus formosus, *Tschudi, Batr.* p. 87.

? Phryniscus guttatus, *Philippi, Arch. f. Naturg.* 1861, p. 300.

Habit stout. Head broader than long; snout short, rounded; interorbital space broader than the upper eyelid. Fore limb shorter than the trunk; fingers short, first a little shorter than second; metacarpal and subarticular tubercles well developed. Hind limb short, the tibio-tarsal articulation reaching hardly the shoulder; toes short, one-third webbed, with prominent double subarticular tubercles; two metatarsal tubercles. Upper surfaces covered with warts. Black, variously spotted with white. Male with a subgular vocal sac.

Uruguay, Buenos Ayres.

a–c. ♂ ♀.	Maldonado.	C. Darwin, Esq. [P.].
d. ♂.	Monte Video.	
e. ♀.	Buenos Ayres.	E. White [C.].
f. ♀.	S. America.	Sir A. Smith [P.].

2. Phryniscus proboscideus. (Plate XIII. fig. 1.)

Habit slender. Head as long as broad, its length contained twice and a half or twice and one fourth in the length of the trunk; snout much produced beyond the lip, truncate; loreal region concave; nostril near the tip of the snout; the diameter of the eye equals its distance from the nostril; interorbital space a little broader than the upper eyelid. Fore limb moderately slender, as long as the trunk; fingers long and slender, first nearly as long as second; two metacarpal tubercles; subarticular tubercles very prominent. Hind limb moderate, the tibio-tarsal articulation marking the posterior corner of the eye; toes moderate, slender, with a slight rudiment of web, and very prominent subarticular tubercles; two small metatarsal tubercles. Skin entirely covered with small granular tubercles intermixed with larger ones. Yellowish brown, marbled with blackish above and beneath; a very narrow light vertebral line; gular and pectoral regions blackish. From snout to vent 46 millim.

Bahia.

a, b, c. ♀, hgr., & yg.	Bahia.

3. Phryniscus lævis.

Phryniscus lævis, *Günth. Cat.* p. 43, pl. iii. fig. A.
(Phryniscus ignescens, *Cornalia, Vert. syn. quæ in it. Osculati, &c.,* p. 316.)[*]
Phryniscus lævis, *Günth. Proc. Zool. Soc.* 1859, p. 417.
Phrynidium læve, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 196.
Atelopus lævis, *Cope, Proc. Ac. Philad.* 1868, p. 117.
—— ignescens, *Espada, Viaj. Pacif., Vert.* p. 139, pl. 1. f. 7 & 8.

Habit rather stout. Head as broad as long, its length contained nearly three times in females, twice and one third or twice and a half in males, in the length of the trunk; snout rather protruding, longer than the diameter of the eye; upper surface of head and loreal region concave; nostril slightly nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid. Fore limb shorter than the trunk. Fingers rather short, depressed, webbed at the base, with swollen tips; first finger nearly as long as second; metacarpal and subarticular tubercles distinct, though scarcely prominent. Hind limb moderate, the tibio-tarsal articulation marking the shoulder in females, between the shoulder and the eye (never reaching the latter) in males. Toes rather short, depressed, broadly webbed; subarticular tubercles very indistinct; two more or less distinct, flat metatarsal tubercles. Upper surfaces smooth or with flat warts; sides, upper parts of thigh, and humerus generally with small spiny warts. Male with a subgular vocal sac.

W. S. America.

The specimens show the following varieties of colour:—

A. Above uniform brownish black; beneath yellowish; anal region generally brown.

a–b. ♂ ♀.	Panama.	Mr. Puffeis [C.].	Types.
c. ♂.	Quito.		
d–e. ♂ ♀.	W. Ecuador.	Mr. Fraser [C.].	
f–g. ♂ ♀.	Intac, Ecuador.	Mr. Buckley [C.].	
h–k. Yg.	Chili?		

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[*] I have been unable to consult this work, and therefore cannot offer an opinion as to the correctness of this reference.

B. Greyish above, marbled with yellow and blackish brown; beneath yellowish, anal region brown.

l–o, p–q. ♂ ♀.	W. Ecuador.	Mr. Fraser [C.].
r. ♀.	Paitanga, Ecuador.	Mr. Buckley [C.].

C. Purplish brown above, immaculate; limbs green; flanks greenish or purple, white-dotted; greenish yellow beneath.

s, t. ♂.	Paitanga, Ecuador.	Mr. Buckley [C.].

D. Bright green, with a few irregular purple spots; greenish yellow beneath, except the belly and thighs, which are orange.

u, v. ♂ ♀.	Intac, Ecuador.	Mr. Buckley [C.].

4. **Phryniscus seminiferus.**

Atelopus seminiferus, *Cope, Proc. Ac. Philad.* 1874, p. 130.

Snout viewed from above rounded, truncate, and in profile somewhat prominent; the diameter of the eye equals the length of the snout. Fingers slightly, toes entirely webbed. Body elongate, limbs rather short; the heel marking the scapula. Skin smooth except on the sides, where there are numerous closely-placed minute tubercles from the head to the groin; a broad fold of skin extending from the side to the middle of the length of the femur. Above dark brown; below brownish orange; sides black from head to groin: each tubercle of the skin yellow, resembling yellow grains; limbs uniform black.

Peru.

5. **Phryniscus varius.**

Phryniscus varius, *Günth. Cat.* p. 45.

Atelopus varius, *Stannius, Handb. der Zoot.* 2. Aufl. *Amph.* p. 16; *Keferst. Götting. Nachr.* 1867, p. 350, *and Arch. f. Naturg.* 1868, p. 292, pl. viii. f. 33 & 34.

Phrynidium varium, *Martens, Nomencl. Rept. Mus. Zool. Berol.* p. 40.

Hylæmorphus dumerilii, *Schmidt, Denkschr. Ac. Wien*, 1858, p. 255, pl. 3. f. 23 & 24.

Habit slender. Head longer than broad, its length contained twice and a half or twice and two thirds in females, twice or twice and one third in males, in the length of the trunk; sides of head vertical; snout subacuminate, projecting; nostril much nearer the tip of the snout than the eye; the diameter of the latter equals its distance from the nostril; interorbital space considerably broader than the upper eyelid in females, as broad as, or a little broader than the upper eyelid in males. Fore limb slender, as long as or a little longer than the trunk; fingers moderate, first short but very distinct; one rather indistinct metacarpal tubercle; no subarticular tubercles. Hind limb moderate; the tibio-tarsal articulation marks the posterior corner of the eye in males, does not reach so far in females; toes rather short, first very short but distinct, nearly entirely webbed; no metatarsal nor subarticular tubercles. Skin quite smooth. Two varieties of colour may be distinguished: in both the upper surfaces are black and the lower surfaces yellow; in the first variety the markings of the upper surfaces are crimson, in the other they are greenish yellow: these markings very variable, arranged in spots or in confluent symmetrical bands. Males (probably of the second variety) greyish above dotted with black, the light markings black-edged; an internal subgular vocal sac.

C. America: Colombia.

a–b. ♀, var. 2.	Costa Rica.	Prof. Peters.
c. Many spec. (both varieties): ♂, ♀, & hgr.	Costa Rica.	Messrs. Salvin and Godman [P.].
d–e. ♀, var. 1.	Costa Rica.	O. Salvin, Esq. [C.].
f–h, i–l. ♂ ♀, var. 2.	Costa Rica.	

6. Phryniscus longirostris.

Atelopus longirostris, *Cope, Proc. Acad. Philad.* 1868, p. 116; *Espada, Viaj. Pacif., Vert.* p. 155, pl. 2. f. 1 & 2.
—— varius, *Bouleng. Bull. Soc. Zool. France,* 1880, p. 46.

Very closely allied to *P. varius,* from which it differs in the longer, more pointed, and more prominent snout, and the longer hind limb, the tibio-tarsal articulation marking the front of the eye. Above black; under surfaces and upper lip yellow; a greenish spot on each scapular region, and two or three pairs of the same on each side of the vertebral line.

Ecuador.

7. Phryniscus flavescens.

Atelopus flavescens, *Günth. Cat.* p. 48.
Atelopus flavescens, *Dum. & Bibr.* p. 661.
—— spumarius, *Cope, Proc. Ac. Philad.* 1871, p. 222.

Habit slender. Head as broad as long, its length contained about twice and a half in females, scarcely more than twice in males, in the length of the trunk; sides of head vertical; snout subacuminate, projecting; nostril much nearer the tip of the snout than the eye; the diameter of the latter equals its distance from the nostril; interorbital space broader than the upper eyelid (as broad as the upper eyelid in one, male, specimen). Fore limb slender, a little longer than the trunk; fingers moderate, first very short, rudimentary; no metacarpal nor subarticular tubercles. Hind limb rather slender, the tibio-tarsal articulation marks the posterior corner of the eye; toes short, first quite indistinct, one-third webbed; no metatarsal nor subarticular tubercles. Skin quite smooth. Bright yellow: upper surfaces dotted and marbled with brown or blackish:

lower surfaces immaculate or marbled with brown on the throat and under the limbs. Male with an internal subgular vocal sac.

E. S. America.

a–c. Hgr.	Demerara Falls.
d–g. ♂ ♀.	Interior of Brazil.

8. **Phryniscus pulcher.** (Plate XIII. fig. 2.)

Habit slender. Head a little longer than broad, its length contained about twice and a half in females, twice and one third in males, in the length of the trunk; canthus rostralis angular; sides of head vertical; snout subacuminate, truncate, projecting; nostril much nearer the tip of the snout than the eye; the diameter of the latter equals its distance from the nostril; interorbital space broader than the upper eyelid. Fore limb slender, a little longer than the trunk; fingers moderate, first very short, rudimentary; no metacarpal nor subarticular tubercles. Hind limb rather slender, the tibio-tarsal articulation marking the posterior corner of the eye; toes short, first quite indistinct, one-third webbed; no metatarsal nor subarticular tubercles. Skin quite smooth. Blackish brown above, with light green markings, viz. a broad curved streak on each side of the back, a few round spots on the head and back, and stripes across the limbs; lower surfaces carmine, more or less spotted with black. Male with an internal subgular vocal sac.

This species resembles very much *A. flavescens* in general structure, but the head is narrower and the snout shorter. From snout to vent 35 millims.

E. Peru.

a–e. ♂ ♀.	Chyavetas.

9. **Phryniscus cruciger.**

Phryniscus cruciger, *Günth. Cat.* pp. 44, 136, pl. iii. fig. B.
Phrynidium crucigerum, *Martens, Nomencl. Mus. Berol.* p. 40.
? Phirix pachydermus, *Schmidt, Denkschr. Ac. Wien*, 1858, p. 256, t. 3. f. 26.
? Atelopus planispina, *Espada, Viaj. Pacif., Vert.* p. 148.

Habit slender. Head longer than broad, its length contained three times in females, twice and a half in males, in the length of the trunk; snout prominent, truncate, longer than the diameter of the eyeball; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid. Fore limb slender, longer than the trunk; fingers webbed at the base, with swollen tips; first finger very short; an indistinct metacarpal tubercle; subarticular tubercles none. Hind limb rather elongate, the tibiotarsal articulation marking the eye; toes half webbed, inner very short but perfectly distinct; tips of toes swollen; metatarsal tubercles indistinct; subarticular tubercles very indistinct. Upper surfaces with flat warts. Olive above, punctulated with black, and with more or less regular black figures; sides black; beneath whitish, immaculate. Male with a subgular vocal sac.

C. America; Venezuela.

a–c. ♂ ♀.	Curanna, Venezuela.	Mr. Dyson.
d–e. ♂.	Central America.	Sir A. Smith [P.].

10. Phryniscus elegans.

Habit slender. Head longer than broad, its length contained nearly three times in that of the trunk; sides of head vertical; snout prominent, truncate, not pointed, a little longer than the diameter of the eyeball; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid. Fore limb slender, longer than the trunk; fingers slightly webbed at the base, first very short; no metacarpal nor subarticular tubercles. Hind limb slender; the tibio-tarsal articulation marks the middle of the eye; toes nearly entirely webbed, inner very short but perfectly distinct; no subarticular nor metatarsal tubercles. Skin perfectly smooth. Light pinkish grey above, vermiculated with broad black lines; a black streak from the tip of the snout, through the eye, along each side of the body to the groin; lower surfaces white, immaculate, except a few small black spots under the limbs.

Ecuador.

a. ♀.	Tanti, 2000 feet.	Edw. Whymper, Esq. [C.].

11. Phryniscus bibronii.

Phryniscus bibronii, *Günth. Cat.* p. 137.

? Hylæmorphus bibronii, *Schmidt, Denkschr. Acad. Wien*, 1858, p. 256, t. 3. f. 25.

Habit very slender. Head longer than broad, its length contained twice and a half in the length of the trunk; sides of head vertical; snout prominent, truncate, not pointed, longer than the diameter of the eyeball; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid. Fore limb slender, longer than the trunk: fingers webbed at the base, first very short; no metacarpal nor subarticular tubercles. Hind limb very long, the tibio-tarsal articulation reaching the nostril; toes half webbed, inner very short but perfectly distinct; no subarticular nor metatarsal tubercles. Skin perfectly smooth. Whitish above, with broad brown reticulated bands; along the side of head and body a broad brown band; lower surfaces whitish, immaculate.

Colombia.

a. ♀.	Puerto Cabello.	Sir A. Smith [P.].

The examination of a large series of specimens may prove the three latter species not to be specifically separable from one another.

3. BRACHYCEPHALUS.

Brachycephalus, *Fitzing. N. Class. Rept.* p. 39; *Wagl. Syst. Amph.* p. 207; *Tschudi, Batr.* p. 87; *Dum. & Bibr.* viii. p. 726; *Günth. Cat.* p. 46; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 197.
Ephippifer, *Cocteau, Mag. Zool. Guérin*, iii. 1835.

Pupil horizontal. Tongue elliptical, entire and free behind. Palate smooth. No tympanum. Fingers and toes free. Outer metatarsals united. A broad dorsal bony shield, confluent with the processes of the second to seventh vertebræ. Coracoids and precoracoids slightly divergent; no omosternum; sternum cartilaginous. Diapophyses of sacral vertebra feebly dilated. Terminal phalanges simple.

South America.

1. Brachycephalus ephippium.

Brachycephalus ephippium, *Günth. Cat.* p. 46.
Bufo ephippium, *Spix, Spec. Nov. Test. Ran.* p. 48, t. 20. f. 2.
Brachycephalus ephippium, *Fitz. l. c.*; *Tschudi, l. c.*; *Dum. & Bibr.* p. 729; *Steindachn. Novara, Amph.* p. 35.
Ephippifer spixii, *Coct. l. c.*
—— aurantiacus, *Coct. l. c.*
Brachycephalus aurantiacus, *Girard, U.S. Expl. Exped., Herp.* p. 100, pl. 5. f. 20–24.

Head moderate, flat, bony; snout short; interorbital space much broader than the upper eyelid. Fingers short, inner very short, rudimentary, outer concealed under the skin; toes short, the inner and the outer indistinct; no subarticular nor metatarsal tubercles. The hind limb being carried forwards along the body, the tarsometatarsal articulation reaches the eye, or slightly beyond. Skin smooth; dorsal shield rough. Yellowish, bony parts darker.

Guianas: Brazil.

a. Many spec.	Brazil.	Dr. Gardiner [P.].
b–d. Adult.	Tropical America.	C. Darwin, Esq. [P.].

4. MELANOBATRACHUS.

Melanobatrachus, *Beddome, Proc. Zool. Soc.* 1878, p. 722.

Pupil erect. Tongue elliptic, entire and free behind. Palate smooth. No tympanic disk. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. Coracoids and precoracoids nearly parallel, abutting, latter very weak; no omosternum; sternum cartilaginous. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

India.

1. Melanobatrachus indicus.

Melanobatrachus indicus, *Beddome, l. c.*

Snout short, blunt, with rather indistinct canthus rostralis; interorbital space broader than the upper eyelid. Fingers short, depressed, first much shorter than second; toes rather short, depressed, one-third webbed; subarticular and metatarsal tubercles very indistinct. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches in front of the eye. Upper surfaces tubercular; sides and lower surfaces smooth. Black; tubercles of back greyish; belly dotted with greyish; a large whitish (scarlet) spot on the lower surface of the thigh. Male with a subgular vocal sac.

S.W. India.

a. ♂.	Anamallays, 4000 ft.	Col. Beddome [P.]. (One of the types.)
b. ♂.	N. Travancore.	Col. Beddome [P.].
c–g. ♂, ♀, & hgr.	S.W. India, 3000–4500 ft.	Col. Beddome [C.].

5. SPHENOPHRYNE.

Sphenophryne, *Peters & Doria, Ann. Mus. Genov.* xiii. p. 430.

Pupil horizontal. Tongue heart-shaped, free behind. Vomerine teeth none. Tympanum distinct. Fingers and toes free, the tips dilated into distinct disks. Outer metatarsals united. Coracoids dilated, precoracoid weak; no omosternum; sternum a cartilaginous plate. Sacral diapophyses dilated.

New Guinea.

1. Sphenophryne cornuta.

Sphenophryne cornuta, *Peters & Doria, l. c.* pl. 7. f. 4.

Physiognomy of *Hyla aurantiaca*. Snout pointed, with distinct canthus rostralis; loreal region nearly vertical; tympanum one third the diameter of the eye. First finger much shorter than second; tips of fingers large, of toes rather smaller; no prominent metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, beneath with small scattered tubercles; a small spiniform tubercle on the upper eyelid. Brown above, blackish spotted and marbled; an irregular blackish line from the chin to the ventral region.

N. Guinea.

6. CALOPHRYNUS.

Calophrynus, *Tschudi, Batr.* p. 86; *Günth. Cat.* p. 54; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 195.

Berdmorea, *Stoliczka, Proc. As. Soc.* 1872, p. 146.

Pupil horizontal. Tongue elliptic, entire and free behind. Vomerine teeth none. A denticulated dermal ridge across the palate between the choanæ, and another in front of the œsophagus. Tympanum distinct. Fingers free; toes webbed, the tips not dilated into regular disks. Outer metatarsals united. Coracoids broad, abutting; precoracoids weak, parallel with the latter; omosternum and sternum cartilaginous. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

East Indies; Southern China.

1. Calophrynus pleurostigma.

Calophrynus pleurostigma, *Günth. Cat.* p. 54.
Calophrynus pleurostigma, *Tschudi, l. c.*; *Peters, Mon. Berl. Ac.* 1867, p. 33; *Günth. Zool. Rec.* viii. p. 86.
Engystoma interlineatum, *Blyth, Journ. As. Soc.* xxiii. p. 732.
Diplopelma interlineatum, *Anders. Proc. Zool. Soc.* 1871, p. 202.
Berdmorea interlineata, *Stoliczka, l. c.*

Snout prominent, truncate; canthus rostralis angular; loreal region vertical; interorbital space broader than the upper eyelid; tympanum nearly as large as the eye. Fingers short, first a little shorter than second, which is longer than fourth; toes short, half webbed, third longer than fifth; tips of fingers and toes slightly swollen; subarticular tubercles very prominent; two small, rather indistinct metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the eye. Skin of the back smooth or tubercular, very thick, glandular; belly granular; a more or less distinct lateral fold, commencing from the eye. Brown or reddish above, with or without longitudinal dark stripes; a dark, light-edged round spot on the loin; sides of head and body dark brown; limbs cross-barred.

S. China; Birmah; Borneo.

a. ♀.	Borneo.	
b–c. ♀ & hgr.	Pegu.	W. Theobald, Esq. [C.].

2. Calophrynus punctatus.

Calophrynus punctatus, *Peters, Mon. Berl. Ac.* 1871, p. 579, *and Ann. Mus. Genov.* iii. p. 43.

Fingers and toes remarkably short; fourth finger extending as far as second; third toe not extending beyond fifth. Dark brown, punctated with black above.

Sarawak.

7. STEREOCYCLOPS.

Stereocyclops, *Cope, Proc. Amer. Philos. Soc.* 1869, p. 165.

Pupil round. Tongue large, free behind. Vomerine teeth none. A short frenum across the palate behind. Anterior portion of the sclerotica ossified, so as to form a hard annulus round the cornea. Tympanum concealed. Fingers and toes free. Precoracoids present; no omosternum; sternum cartilaginous, much dilated, and entirely in contact with the coracoids.

Brazil.

1. Stereocyclops incrassatus.

Stereocyclops incrassatus, *Cope, l. c.*

Physiognomy approaching *Pipa*. Gape large, the muzzle projecting slightly beyond it. Limbs short, humerus and femur included in the skin. Toes very unequal, the inner and outer very short. An obtuse tubercle at the base of the outer toe. Epidermis everywhere thickened by a chitin-like deposit. Colour everywhere leather-brown; a narrow white line from end of muzzle to vent.

Sao Matheos, south of Rio Janeiro.

8. HYPOPACHUS*.

Hypopachus, *Keferst. Götting. Nachr.* 1867, p. 352.
Engystoma, sp., *Cope, Proc. Ac. Philad.* 1866, p. 131.
Systoma, sp., *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 194.

Pupil erect. Tongue elliptic, entire, free behind. Vomerine teeth none. A dermal ridge across the palate between the choanæ, and another in front of the œsophagus. Tympanum hidden. Fingers free; toes with a rudiment of web, the tips not dilated. Outer metatarsals united. Precoracoids present, very weak; no omosternum; sternum cartilaginous. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

Tropical America.

1. Hypopachus variolosus.

Engystoma variolosum, *Cope, Proc. Ac. Philad.* 1866, p. 131, *and Proc. Amer. Philos. Soc.* 1869, p. 166; *Brocchi, Bull. Soc. Philom.* (7) i. p. 192.
Hypopachus seebachii, *Keferst. Götting. l. c., and Arch. f. Naturg.* 1868, p. 293, pl. 9. f. 1 & 2.
Systoma variolosum, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 194.
Hypopachus variolosus, *Cope, Journ. Ac. Philad.* (2) viii. part ii. p. 101; *Brocchi, Miss. Sc. Mex., Batr.* pl. 10. f. 2.

Snout short, subacuminate, moderately prominent, once and a half the diameter of the eye. Fore limb much longer than its distance from the tip of the snout; fingers moderately elongate. Hind limb stout; it being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder, or nearly as far; toes with a rudiment of web, the tips blunt; subarticular tubercles distinct; two very prominent, oval, compressed metatarsal tubercles, the inner very large. Skin perfectly smooth; a fold across the head, behind the eyes. Brown above, immaculate or with darker markings; sides and hinder side of thighs marbled with dark brown; a very narrow, indistinct, light vertebral line; beneath brown, spotted with yellowish; generally a very narrow light median line commencing from the chin.

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* *Copea fulva*, Steindachn. Verh. zool.-bot. Ges. Wien, 1864, p. 286, pl. xvii. f. 5, belongs perhaps to this genus. *Hab.* Brazil.

C. America; Para.

a. ♀.	Costa Rica.	O. Salvin, Esq. [C.].
b–c. ♀.	Costa Rica.	
d. ♀.	Para.	Berlin Museum [P.].

2. **Hypopachus inguinalis.**

Hypopachus inguinalis, *Cope, Proc. Am. Phil. Soc.* 1869, p. 166; *Brocchi, Miss. Sc. Mex., Batr.* pl. 10. f. 3 & 4.
Engystoma inguinalis, *Brocchi, Bull. Soc. Philom.* (7) i. p. 189.

Snout short, subacuminate, slightly prominent, once and a half the diameter of the eye. Fore limb much longer than its distance from the tip of the snout; fingers moderately elongate. Hind limb moderately stout; it being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder; toes with a rudiment of web, the tips blunt; subarticular tubercles distinct; two very prominent, blunt metatarsal tubercles. Skin smooth, or with small indistinct tubercles; a fold across the head, behind the eyes. Olive-brown or reddish above, marbled with darker; a very narrow carmine line from the tip of the snout to the vent; another along the inner side of the hind limb; a carmine line from the eye to the root of the arm; beneath whitish, marbled with black; generally a very narrow light median line commencing from the chin, meeting another, angular one, across the chest. Male with a subgular vocal sac.

Guatemala; (Ecuador?).

a–e, f–h. ♂, ♀, & hgr.	Coban, Vera Paz.	O. Salvin, Esq. [C.].
i. ♀.	Ecuador.	Mr. Fraser [C.].

9. ENGYSTOMA*.

Engystoma, *Fitzing. N. Classif. Rept.* p. 65; *Günth. Cat.* p. 51.
Microps, *Wagl. Isis,* 1828, p. 744, *and Syst. Amph.* p. 200.
Stenocephalus, *Tschudi, Batr.* p. 86.
Engystoma, sp., *Dum. & Bibr.* viii. p. 738; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 194.
Systoma, sp., *Cope, l. c.*

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* *Engystoma rugosum,* Dum. & Bibr. p. 744.—S. United States.

Pupil erect. Tongue elliptic, entire, free behind. Vomerine teeth none. A dermal ridge across the palate between the choanæ, and another in front of the œsophagus. Tympanum hidden. Fingers and toes free, blunt or dilated at the tips. Outer metatarsals united. Coracoids united by a simple cartilage; precoracoids none; no omosternum; sternum cartilaginous. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

America.

Synopsis of the Species.

I. Two metatarsal tubercles	1. *ustum*, p. 161.
II. A single metatarsal tubercle.	
Snout rather obtuse, not twice as long as the diameter of the eye	2. *carolinense*, p. 162.
Snout pointed, projecting, twice as long as the diameter of the eye; hip with a round dark-brown spot	3. *elegans*, p. 162.
Snout pointed, projecting, about twice as long as the diameter of the eye; a whitish streak along the hinder side of the thighs.	4. *ovale*, p. 163.
Snout pointed, strongly projecting, four times as long as the diameter of the eye; tips of toes swollen into regular disks	5. *microps*, p. 163.

1. Engystoma ustum.

Engystoma carolinense, part., *Günth. Cat.* p. 51.
Engystoma rugosum, *Günth. l. c.* p. 52.
Engystoma ustum, *Cope, Proc. Ac. Philad.* 1866, p. 131, & 1871, p. 216; *Brocchi, Bull. Soc. Philom.* (7) i. p. 193, *and Miss. Sc. Mex., Batr.* pl. 10. f. 1.
Systoma ustum, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 194.
Engystoma mexicanum, *Peters, Mon. Berl. Ac.* 1869, p. 881.

Snout acuminate, moderately projecting, not twice as long as the diameter of the eye. Fore limb considerably longer than its distance from the tip of the snout. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder, or slightly beyond. Toes quite free, with blunt tips aud distinct subarticular tubercles; two very prominent metatarsal tubercles, inner largest, oval. Skin smooth or with small tubercles on the back; a more or less distinct fold across the head, behind the eyes. Olive or brownish above; generally a light band along each side of the body, and a narrow vertebral line; limbs lighter, thigh and leg each with a broad dark cross band; a white line from angle of mouth to base of arm; beneath marbled with brownish. Male with a subgular vocal sac; the throat deep black.

Mexico.

a–b. ♂ ♀.	Tehuantepec.	Brussels Museum [E.].
c–d. Hgr.	Cordova.	M. Sallé [C.].
e. ♀.	Mexico.	M. Sallé [C.].
f, g. ♀ & hgr.	Mexico.	

2. Engystoma carolinense.

Engystoma carolinense, part., *Günth. Cat.* p. 51.
Engystoma carolinense, *Holbr. N.-Amer. Herp.* i. p. 83, pl. 2; *Dum. & Bibr.* p. 743; *Hallow. Proc. Ac. Philad.* 1856, p. 251.
—— olivaceum, *Hallow. l. c.*
—— texense, *Girard, Proc. Ac. Philad.* 1859, p. 169.

Snout rather obtuse, slightly projecting, not twice as long as the diameter of the eye. Fore limb considerably longer than its distance from the tip of the snout. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder in the female, a little beyond in the male. Toes quite free, with blunt tips and distinct subarticular tubercles; a very small inner metatarsal tubercle; no outer tubercle. Skin smooth; a fold across the head, behind the eyes. Brown, dotted with lighter beneath. Male with a subgular vocal sac.

S.E. N. America.

a–b, c. ♂, ♀, & hgr.	New Orleans.	
d. ♂.	N. America.	Edward Doubleday, Esq. [P.].

3. Engystoma elegans.

Engystoma carolinense, part., *Günth. Cat.* p. 51.

Snout pointed, projecting, twice as long as the diameter of the eye. Fore limb considerably longer than its distance from the tip of the snout. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the shoulder; toes quite free, with blunt tips and distinct subarticular tubercles; a very small, very indistinct, inner metatarsal tubercle; no outer tubercle. Skin perfectly smooth; a fold across the head, behind the eyes. Light brown above; back with an irregular broad dark band; sides of head and body dark brown; hip with a round dark-brown spot; thigh, leg, and tarsus each with a broad dark-edged cross band; belly marbled with brown; throat brown, marbled with whitish.

In coloration this species resembles *E. ustum*, from which it differs in having a single, hardly distinct, metatarsal tubercle. From *E. ovale* it differs in the longer hind limbs; and from *E. carolinense* in the latter character and in the longer, more pointed snout.

Mexico.

a. ♀.	Cordova.	M. Sallé [C.].

4. Engystoma ovale.

Engystoma ovale, *Günth. Cat.* p. 51.
Rana ovalis, *Schneid. Hist. Amph.* p. 13; *Shaw, Zool.* iii. p. 3.
Bufo surinamensis, *Daud. Rain.* pl. 33. f. 2, *and Rept.* viii. p. 184.
—— ovalis, *Daud. Rain.* p. 92, *and Rept.* viii. p. 187.
Rana bufonia, *Merr. Tent.* p. 177.
Engystoma ovale, *Fitz. Neue Classif. Rept.* p. 65; *Dum. & Bibr.* p. 741; *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 285, pl. 18. f. 4.
Oxyrhynchus bicolor, (*Valenc.*) *Guérin, Icon. Rept.* pl. 27. f. 2.
Microps unicolor, *Wagl. Syst. Amph.* p. 200.
Stenocephalus microps, *Tschudi, Batr.* p. 88.

Snout pointed, projecting, about twice as long as the diameter of the eye. Fore limb short, longer than its distance from the tip of the snout; fingers short, first shorter than second. The hind limb being carried forwards along the body, the tibio-tarsal articulation does not reach the shoulder; toes quite free, with blunt tips and distinct subarticular tubercles; a very small inner metatarsal tubercle; no outer tubercle. Skin perfectly smooth; a fold across the head, behind the eyes. Brown above; lower surfaces lighter, marbled with brown; a whitish streak along the hinder side of the thighs. Male with a subgular vocal sac, and the throat black.

S. America.

a. ♀.	Bogotá.
b. ♀.	America.
c–d. ♂ ♀.	—— ?

5. Engystoma microps.

Engystoma microps, *Günth. Cat.* p. 52.
Engystoma microps, *Dum. & Bibr.* p. 744; *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 285, pl. 15. f. 3.

Snout very long, pointed, strongly projecting; eyes very small, one fourth the length of the snout. Fore limb very short, as long as its distance from the tip of the snout; fingers very short, first shorter than second. Hind limb very stout; it being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder; toes quite free, the tips swollen into regular disks; first toe very short; subarticular tubercles indistinct; a very small, scarcely distinct, inner metatarsal tubercle; no outer tubercle. Skin perfectly smooth. Dark brown above, more or less dotted with whitish; light brown beneath, immaculate.

Brazil; Guiana.

a–d. ♀.	Demerara Falls.

10. MICROHYLA.

Microhyla, *Tschudi, Batr.* p. 71; *Dum. & Bibr.* viii. p. 613; *Günth. Cat.* p. 121; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 193.

Hylaplesia, sp., *Boie, Isis,* 1827, p. 294.
Engystoma, sp., *Dum. & Bibr.* viii. p. 738; *Cope, l. c.* p. 194.
Diplopelma, *Günth. Cat.* p. 50.
Scaptophryne, *Fitzing. Sitz. Ak. Wien,* xlii. p. 146.
Ranina, *David, Nouv. Arch. Mus.* vii. 1872, *Bull.* p. 76.

Pupil erect. Tongue elliptic, entire, free behind. Vomerine teeth none. A cutaneous ridge across the palate between the choanæ, and another in front of the œsophagus. Tympanum hidden. Fingers free; toes more or less webbed, sometimes very slightly; tips of fingers and toes blunt or more or less dilated. Outer metatarsals united. Coracoids united by a simple epicoracoid cartilage; precoracoids none; no omosternum; sternum cartilaginous. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

China; East Indies.

Synopsis of the Species.

Toes very slightly webbed; metatarsal tubercles strong, compressed	1. *rubra*, p. 164.
Toes webbed at the base; metatarsal tubercles very small; tibio-tarsal articulation not reaching beyond the eye	2. *ornata*, p. 165.
Tibio-tarsal articulation reaching the tip of the snout, or beyond; toes half webbed, the tips not dilated	3. *pulchra*, p. 165.
Toes webbed at the base, the tips dilated into well-developed disks	4. *achatina*, p. 166.
Toes entirely webbed, the tips dilated into well-developed disks	5. *berdmorii*, p. 166.

1. Microhyla rubra.

Diplopelma ornatum, part., *Günth. Cat.* p. 50.
Engystoma rubrum, *Jerdon, Journ. As. Soc.* xxii. 1853, p. 534.

Habit stout. Snout rounded, a little shorter than the orbital diameter; interorbital space broader than the upper eyelid. Fingers moderate, first much shorter than second; toes moderate, one-third webbed; tips of fingers and toes not swollen; subarticular tubercles very distinct; two rather large, oval, compressed, very prominent metatarsal tubercles, outer somewhat larger than inner. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches somewhat beyond the shoulder, never to the eye. Skin smooth. Reddish brown above, sides darker; a dark-brown line from the tip of the smout through the eye along the side of the back to the groin; a dark-brown mark across the thigh, beginning on the loin; limbs with more or less distinct cross bars; sometimes a dark X-shaped marking on the front of the back, commencing between the eyes; beneath immaculate, or with a few brown dots on the throat. Male with a subgular vocal sac; the throat black.

India.

a–b. ♀.	Assam.	T. C. Jerdon, Esq. [P.].
c. Many spec.: ♂, ♀, hgr., & yg.	Madras.	T. C. Jerdon, Esq. [P.].
d. Skeleton.	Madras.	T. C. Jerdon, Esq. [P.].
e–g. ♀.	S. India.	T. C. Jerdon, Esq. [P.]. (As typical of *Engystoma rubrum.*)
h. ♀.	Ceylon.	Col. Beddome [C.].
i. ♂.	Ceylon.	W. Ferguson, Esq. [P.].

2. Microhyla ornata.

Diplopelma ornatum, part., *Günth. Cat.* p. 50.
Engystoma ornatum, *Dum. & Bibr.* p. 745.
—— carnaticum, *Jerdon, Journ. As. Soc.* 1853, p. 534.
? Engystoma malabaricum, *Jerdon, l. c.*
Diplopelma ornatum, part., *Günth. Rept. Brit. Ind.* p. 417.
—— carnaticum, *Stoliczka, Journ. As. Soc.* 1870, p. 154, pl. 9. f. 5.

Habit moderately slender. Snout obtuse, as long as or a little longer than the orbital diameter; interorbital space broader than the upper eyelid. Fingers rather slender, first much shorter than second; toes rather slender, with a slight rudiment of web; tips of fingers and toes swollen into very small disks; subarticular tubercles very distinct; two small, subequal, metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the shoulder and the eye, never beyond the latter. Skin smooth. Reddish or greyish olive above, with a large dark marking on the back, beginning between the eye and becoming broader as it extends to the hind part of the body; on each side of this marking are undulating longitudinal dusky lines, which may be absent; a dark band along the side of the head and body; limbs with dark cross bars; throat and chest generally greyish or brownish, dotted with white; the remainder of the lower surfaces immaculate. Male with a subgular vocal sac.

China; India.

a. ♂.	Ningpo.	
b–f. ♂ ♀.	Szechuen.	R. Swinhoe [C.].
g. ♀.	Gamboja.	M. Mouhot [C.].
h–i. ♀.	Assam.	T. C. Jerdon, Esq. [P.].
k–l. Hgr.	Madras.	T. C. Jerdon, Esq. [P.].
m. Hgr.	Madras.	W. T. Blanford, Esq. [P.].
n. ♀.	India.	Sir E. Belcher [P.].
o–p. ♂.	India.	Dr. Leith [P.].

3. Microhyla pulchra.

Diplopelma ornatum, part., *Günth. Cat.* p. 50.
Engystoma pulchrum, *Hallow. Proc. Ac. Philad.* 1860, p. 506.

Diplopelma pulchrum, *Günth. Rept. Brit. Ind.* p. 417; *Steindachn. Novara, Amph.* p. 36, pl. 2. f. 15–18.
Scaptophryne labyrinthica, *Fitzing. Sitz. Ak. Wien*, xlii. p. 416.
Ranina symmetrica, *David, Nouv. Arch. Mus.* vii. *Bull.* p. 76.

Habit slender. Snout subacuminate, a little longer than the orbital diameter; interorbital space as broad as the upper eyelid. Fingers rather slender, first much shorter than second; toes long, half webbed; tips of fingers and toes not dilated; subarticular tubercles very distinct; two very small metatarsal tubercles. Hind limb very long, the tibio-tarsal articulation reaching the tip of the snout, or beyond. Skin smooth. Olive, greyish, or pinkish brown above, beautifully marked with darker and lighter Λ-like lines on the back, and transverse lines across the limbs; a cross streak between the eyes, a large Λ-shaped marking on the back, and a streak from the eye to the middle of the side dark brown; throat and chest clouded with brown; the remainder of the lower surfaces immaculate. Male with a subgular vocal sac.

China; Gamboja.

a, b. ♂.	Hong Kong	J. C. Bowring, Esq. [P.].
c. ♀.	China.	Mr. Adams [C.].
d. ♀.	China.	
e. Hgr.	Gamboja.	M. Mouhot [C.].

4. Microhyla achatina.

Micrhyla achatina, *Günth. Cat.* p. 121.
Hylaplesia achatina, *Boie, Isis*, 1827, p. 294.
Microhyla achatina, *Tschudi, Batr.* p. 71; *Dum. & Bibr.* p. 614; *Peters & Doria, Ann. Mus. Genov.* xiii. p. 428.
Diplopelma disciferum, *Peters, Mon. Berl. Ac.* 1867, p. 36.

Habit slender. Snout subacuminate, longer than the orbital diameter; interorbital space broader than the upper eyelid. Fingers rather slender, first much shorter than second; toes slender, webbed at the base; tips of fingers swollen into very small, of toes into well-developed disks; subarticular tubercles distinct; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or beyond. Skin smooth. Brown above; sides and a streak between the eyes dark brown; sometimes the back with rather indistinct chevron-shaped darker and lighter lines and a narrow light vertebral line; limbs more or less distinctly cross-barred; anal region blackish.

Java; Moluccas.

a. ♀.	Java.	Leyden Museum.
b–c. ♀.	Posata, Bantam.	
d. ♀.	——?	

5. Microhyla berdmorii.

Engystoma berdmorei, *Blyth, Journ. As. Soc.* xxiv. p. 710.
Callula natatrix, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 192.

Diplopelma berdmorei, *Günth. Zool. Rec.* iv. p. 146; *Anders. Proc. Zool. Soc.* 1871, p. 202; *Stoliczka, Proc. As. Soc.* 1872, p. 109.

Habit slender. Snout obtuse, as long as, or a little longer than, the orbital diameter; interorbital space broader than the upper eyelid. Fingers slender, with slightly swollen tips; first finger much shorter than second; toes long, webbed to the tips, which are dilated into rather large disks; subarticular tubercles very distinct; two very small metatarsal tubercles. Hind limb very long; it being stretched forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth, or with a few scattered indistinct tubercles on the back and sides. Brownish, olive or pinkish above; a darker, light-edged, hourglass-shaped, large spot on the front part of the back, beginning between the eyes, sometimes continued on the hind part of the back; black spots on the sides of the limbs and occasionally on the flanks; a chevron-shaped black marking on the anal region; throat and chest clouded with brown; the remainder of the lower surfaces immaculate.

Birmah.

a–c. ♀.	Pegu.	W. Theobald, Esq. [C.].
d–e. ♀.	Birmah.	W. Theobald, Esq. [C.].

11. CALLULA.

Kaloula, *Gray, Zool. Misc.* p. 38; *Günth. Cat.* p. 122.
Hylædactylus, *Tschudi, Batr.* p. 85; *Dum. & Bibr.* viii. p. 732.
Plectropus, *Dum. & Bibr.* p. 736.
Holonectes, *Peters, Mon. Berl. Ac.* 1863, p. 455.
Calohyla, *Peters, l. c.*
Callula, *Günth. Rep. Brit. Ind.* p. 436; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 192.

Pupil erect. Tongue oblong, entire and free behind. Vomerine teeth none. Palatine bone forming an acute, sometimes toothed ridge across the palate. Two cutaneous, more or less distinctly denticulated ridges across the palate, in front of the œsophagus. Tympanum hidden. Fingers free; toes more or less webbed (exceptionally free), the tips more or less dilated. Outer metatarsals united. No precoracoids; no omosternum; sternum cartilaginous. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges triangular or T-shaped.

East Indies.

Synopsis of the Species.

I. Toes at least one-third webbed.

Tips of fingers slightly swollen .... 1. *picta*, p. 168.

Tips of fingers dilated into large disks; metatarsal tubercles moderately large .. 2. *conjuncta*, p. 168.

Tips of fingers dilated into well-developed disks; outer metatarsal tubercle minute. 3. *obscura*, p. 169.

II. Toes webbed at the base.

Inner metatarsal tubercle large, blunt-edged .... 4. *baleata*, p. 169.

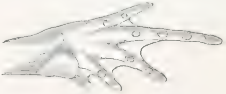
Inner metatarsal tubercle large, sharp-edged .... 5. *pulchra*, p. 170.

Metatarsal tubercles small, scarcely prominent .... 6. *olivacea*, p. 171.

III. Toes perfectly free .... 7. *triangularis*, p. 171.

1. Callula picta.

Kaloula picta, part., *Günth. Cat.* p. 123.
Plectropus pictus, (*Bibr.*) *Eyd. & Soul. Voy. Bonite, Rept.* pl. 9. f. 2; *Dum. & Bibr.* p. 737; *Peters, Mon. Berl. Ac.* 1863, p. 455.
Callula picta, *Günth. Rept. Brit. Ind.* p. 436.



Lower surface of foot.

Snout short, blunt, a little longer than the diameter of the eye; interorbital space as broad as the upper eyelid. Fingers slender, with slightly swollen tips, first a little shorter than second; toes moderate, nearly half webbed, with slightly swollen tips, fifth much shorter than third; subarticular tubercles well developed; metatarsal tubercles two, oval, compressed, the inner very large. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Upper surfaces with small scattered smooth tubercles; a fold from the eye to the shoulder. Olive above, with large dark spots, confluent on the middle of the back; sides of head and body dark; beneath, speckled with greyish or brownish; the male's throat blackish. Male with a subgular vocal sac.

Philippine Islands.

a. ♂.	Philippines.	
b–c. Hgr.	Negros.	Dr. A. B. Meyer [C.].
d. ♂.	Laguna del Bay.	Dr. A. B. Meyer [C.].
e–f. ♂.	—— ?	J. C. Bowring, Esq. [P.].

2. Callula conjuncta.

Hylædactylus (Holonectes) conjunctus, *Peters, Mon. Berl. Ac.* 1863, p. 455; *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 256, pl. 11. f. 5.
Callula conjuncta, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 192.

Snout short, blunt, as long as the orbital diameter; interorbital space broader than the upper eyelid. Fingers moderate, the tips dilated into large truncated disks; first finger shorter than second; toes moderate, half webbed, the tips dilated into small disks; subarticular tubercles distinct, two metatarsal tubercles, inner moderately large, blunt. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye or a little beyond. Skin smooth, or with a few indistinct tubercles on the back; a more or less distinct fold across the head behind the eyes. Olive above, with a large dark marking on the back; sides of head and body dark; beneath indistinctly marbled.

Philippines.

a–c, d. ♀ & hgr.	Philippines.

3. **Callula obscura.** (PLATE XIII. fig. 3.)

Callula obscura, *Günth. Rept. Brit. Ind.* p. 438.
? Hylædactylus montanus, *Jerdon, Journ. As. Soc.* xxii. 1853, p. 533.

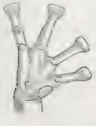
Snout short, rounded, as long as or a little longer than the orbital diameter; interorbital space broader than the upper eyelid. Fingers moderate, the tips dilated into well-developed truncated disks; first finger shorter than second; toes moderate, one-third or half webbed, the tips slightly swollen; subarticular tubercles distinct; two small metatarsal tubercles, the inner oval, blunt, scarcely prominent, the outer minute, rounded. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye or the tip of the snout. Skin smooth, or with small flat tubercles on the head and back; a fold from the eye to the shoulder. Above brownish or greyish with blackish angular markings, sometimes uniform blackish brown; beneath blackish brown spotted with whitish. Male with a subgular vocal sac.

Ceylon; S. India.

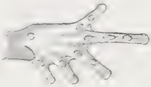
a. ♂.	Ceylon.	Sir A. Smith [P.]. (Type.)
b–c. Hgr.	Ceylon.	G. H. K. Thwaites, Esq. [P.].
d. ♀.	Ceylon.	
e. ♀.	Travancore.	Col. Beddome [C.].
f. ♂.	Anamallays.	Col. Beddome [C.].
g. Many sp.: ♂, ♀, & hgr.	Malabar.	Col. Beddome [C.].
h. ♀.	——?	T. C. Jerdon, Esq. [P.].

4. **Callula baleata.**

Kaloula baleata, *Günth. Cat.* p. 122.
Bombinator baleatus, *Müll. Verhandel. Batav. Genootsch.* 1836, p. 96.
Hylædactylus baleatus, *Tschudi, Batr.* p. 85; *Dum. & Bibr.* p. 734.
Kaloula baleata, *Steindachn. Novara, Amph.* p. 68.



Lower surface of hand.



Lower surface of foot.

Snout short, rounded, as long as the orbital diameter; interorbital space broader than the upper eyelid. Fingers moderate, the tips strongly dilated, truncated; first finger shorter than second; toes rather short, webbed at the base, the tips swollen into small disks; subarticular tubercles distinct; metatarsal tubercles two, oval, inner large, compressed, with blunt edge. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the shoulder and the eye. Skin smooth, or with small flat warts on the upper surfaces; a fold from the eye to the shoulder, and another, more or less indistinct, across the head behind the eyes. Brown, olive, or blackish above, uniform or variegated with darker; frequently large whitish spots on the arm-pits, on the loins, and on the limbs; beneath brown, variegated with whitish. Male with a subgular vocal sac.

Java; Celebes; Philippines.

a–b, c. ♂ ♀.	Java.	Leyden Museum.
d. ♀.	Java.	Dr. Bleeker [C.].
e–i, k. ♂ ♀.	N. Celebes.	Dr. A. B. Meyer [C.].
l–m. Hgr.	Laguna del Bay.	Dr. A. B. Meyer [C.].
n. ♀.	—— ?	
o. Hgr.	—— ?	

5. Callula pulchra.

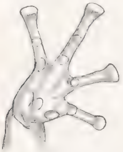
Kaloula pulchra, *Günth. Cat.* p. 123.

Kaloula pulchra, *Gray, Zool. Misc.* p. 38; *Steindachn. Novara, Amph.* p. 68.

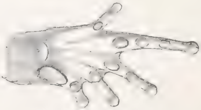
Hylædactylus bivittatus, *Cantor, Cat. Mal. Rept.* p. 143.

Callula pulchra, *Günth. Rept. Brit. Ind.* p. 436; *Stoliczka, Journ. As. Soc.* 1870, p. 155.

? Callula variegata, *Stoliczka, Proc. As. Soc.* 1872, p. 111.



Lower surface of hand.



Lower surface of foot.

Snout short, rounded, as long as the orbital diameter; interorbital space broader than the upper eyelid. Fingers rather slender, the tips dilated into well-developed, truncated disks; first finger shorter than second; toes moderate, slightly webbed at the base, the tips swollen; subarticular tubercles well developed; metatarsal tubercles two, oval, inner large, compressed, with sharp edge. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the shoulder, or a little beyond. Skin of back with flat smooth tubercles; a fold from the eye to the shoulder, and another, more or less distinct, across the head behind the eyes. Light brown or pinkish above, generally with a large dark-brown spot covering nearly the whole of the back, and a dark lateral band; sometimes with confluent spots; beneath immaculate or marbled with brownish. Male with a subgular vocal sac.

India; S. China; Celebes.

a, b. ♀ & hgr.	China.	J. Reeve, Esq. [P.].
c, d–e. Hgr. & yg.	China.	
f. Hgr.	Moulmein.	R. C. Beavan, Esq. [P.].
g. Hgr.	Birmah.	F. Day, Esq. [P.].
h. ♀.	Gamboja.	M. Mouhot [C.].
i–k. ♂ ♀.	Siam.	M. Mouhot [C.].
l. ♂.	Pinang.	Dr. Cantor.
m. ♂.	Ceylon.	Dr. Kelaart.
n. ♀.	Ceylon.	W. Ferguson, Esq. [C.].
o. ♂.	Ceylon.	Col. Beddome [P.].
p. ♀.	Cavery.	Col. Beddome [P.].

6. Callula olivacea.

Callula olivacea, *Günth. Proc. Zool. Soc.* 1875, p. 576, pl. 64. f. B.

Snout short, obtusely prominent, as long as the orbital diameter; interorbital space broader than the upper eyelid. Fingers rather slender, the tips dilated, truncate; toes moderate, not dilated at the ends, with a slight rudiment of web; subarticular tubercles not very prominent; two small, scarcely prominent metatarsal tubercles, the inner elongate. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches hardly the posterior border of the eye. Body rather elongate. Skin nearly smooth; a fold from the eye to the shoulder. Olive above, marbled with dark brown; belly whitish, immaculate. Male with a subgular vocal sac.

W. India.

a–b. ♂.	Yellagherry Hills.	Col. Beddome [P.]. (Types.)
c. ♀.	Godavari, near Bhadrachalam.	W. T. Blanford, Esq. [P.].
d. ♀.	Godavery valley.	W. T. Blanford, Esq. [P.].

7. Callula triangularis. (PLATE XIII. fig. 4.)

Callula triangularis, *Günth. Proc. Zool. Soc.* 1875, p. 576.

Snout short, blunt, as long as the orbital diameter; interorbital space broader than the upper eyelid. Fingers moderate, the tips dilated into rather small truncated disks; toes moderate, perfectly free, the tips not dilated; subarticular tubercles well developed; two small metatarsal tubercles, inner largest, oval, blunt. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the shoulder, or in the middle between the shoulder and the eye. Skin smooth, or with some flat tubercles on the back; a fold from the eye to the shoulder, and another across the head behind the eyes. Light olive above, with a large triangular blackish spot occupying nearly the whole length of the back; sides and lower surfaces blackish brown, latter spotted with whitish; limbs blackish brown, with large light-olive spots. Male with a subgular vocal sac.

S. W. Hindostan.

a. Many spec.: ♂, ♀, & hgr.	Malabar.	Col. Beddome [P.]. (Types).
b, c. ♀ & hgr.	Nilgherries.	W. Theobald, Esq. [P.].

12. XENOBATRACHUS.

Xenobatrachus, *Peters & Doria, Ann. Mus. Genov.* xiii. p. 432.

Pupil —— ? Tongue heart-shaped, free behind. Palatine bones each with two large curved teeth. Tympanum distinct. Fingers and toes free, with swollen tips. Outer metatarsals united. Sternal apparatus as in *Callula*. Diapophyses of sacral vertebra dilated.

New Guinea.

1. Xenobatrachus ophiodon.

Xenobatrachus ophiodon, *Peters & Doria, l. c.* pl. 7. f. 5.

Head small; snout rounded; tympanum half the size of the eye. First finger a little shorter than second; tips of fingers and toes swollen into very small disks; no metatarsal tubercles. The hind limb being carried forwards along the body, the heel reaches nearly the tip of the snout. Skin everywhere smooth. Brown above, irregularly spotted and marbled with blackish; whitish beneath, the throat and chest reticulated with brown.

N. Guinea.

13. PHRYNOMANTIS.

Brachymerus, *Smith, Ill. S. Afr., Rept.*; *Günth. Cat.* p. 124; *Cope, Nat. Hist. Rev.* 1865, p. 102.

Phrynomantis, *Peters, Mon. Berl. Ac.* 1867, p. 35; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 192.

Pupil erect. Tongue large, oblong, nicked behind. Vomerine teeth none. A cutaneous fold across the palate, between the choanæ. Tympanum hidden. Fingers and toes free, the tips dilated into regular disks; outer metatarsals united. Precoracoids none; no omosternum; sternum cartilaginous. Diapophyses of sacral vertebra strongly dilated. Terminal phalanges T-shaped.

Africa; Austro-Malaysia.

1. Phrynomantis bifasciata.

Brachymerus bifasciatus, *Günth. Cat.* p. 124.

Brachymerus bifasciatus, *Smith, l. c.* pl. 63; *Peters, Arch. f. Naturg.* 1855, p. 58.

Phrynomantis bifasciata, *Peters, Mon. Berl. Ac.* 1867, p. 36.

Habit rather stout. Head small; snout rounded, longer than the orbital diameter; interorbital space broader than the upper eyelid. Fingers moderate, first shorter than second; toes short; disks of fingers large, of toes rather smaller; subarticular tubercles distinct; a very small inner metatarsal tubercle. Hind limb very short; it being carried forwards along the body, the tip of the longest toe marks the eye or the tip of the snout. Skin quite smooth; a fold from the eye to the shoulder; a more or less distinct flat gland on the coccygeal region (this is probably the remains of a larval character). Dark brown above; lighter beneath, spotted with whitish. Male with a subgular vocal sac.

South-eastern, South-western, and Southern Africa.

VAR. A. A white (or red), sometimes interrupted streak on each side of the body, beginning on the upper eyelid; a white subtriangular or heart-shaped marking on coccygeal region; limbs spotted with white. The male's throat black.

a–c. ♂, ♀, & yg.	S. Africa.	Sir A. Smith [P.].
d–e. Hgr.	——?	Sir A. Smith [P.].

VAR. B. Similar to the preceding, but the space between the white bands with dark and light longitudinal lines; markings on the legs arranged in cross bars.

f–g. ♂ & hgr.	Shiré valley, Zambesi.	
h. ♀.	Zambesi Expedition.	Dr. Livingstone [C.].

VAR. C. Upper surfaces with large round light spots; no light bands.

i. ♂.	Angola.	J. J. Monteiro [C.].

2. Phrynomantis microps.

Phrynomantis microps, *Peters, Mon. Berl. Ac.* 1875, p. 210, pl. 4. f. 6.

Differs from the preceding in the smaller head and shorter feet. Head and back reddish white; sides and limbs black, latter spotted with white; beneath blackish, spotted with reddish.

Gold Coast.

3. Phrynomantis fusca.

Phrynomantis fusca, *Peters, Mon. Berl. Ac.* 1867, p. 35; *Peters & Doria, Ann. Mus. Genov.* xiii. p. 429.

Snout short, hardly as long as the diameter of the eye. Fifth toe shorter than third. Brown or blackish, lighter beneath, with irregular white lines and small spots; forearm and tarsus with slightly distinct cross streaks. Otherwise as in *P. bifasciata.*

Amboyna; Batanta.

14. CACOPUS.

Systoma, (*non Wagler*) *Tschudi, Batr.* p. 86.
Uperodon, *Dum. & Bibr.* viii. p. 48.
Cacopus, *Günth. Rept. Brit. Ind.* p. 415.

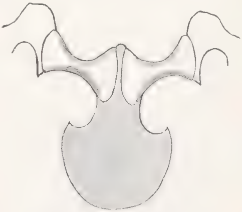
Pachybatrachus, *Keferst. Arch. f. Naturg.* 1868, p. 273.
Systoma, sp., *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 193.

Pupil erect. Tongue oval, entire and free behind. Choanæ very large, with a dermal movable flap, which can close the nostril; two small bony prominences close together, between and on a level with the hinder edge of the choanæ; a small papilla on the hind margin of each choana; a narrow denticulated dermal ridge across the sphenoidal region; another, very broad, in front of the œsophagus. Tympanum hidden or very indistinct. Fingers free; toes webbed at the base, the tips not dilated. Outer metatarsals united. Precoracoids none; sternum a large cartilaginous plate. Diapophyses of sacral vertebra rather strongly dilated. Terminal phalanges simple.

India.

1. Cacopus systoma.

Uperodon marmoratum, *Günth. Cat.* p. 49.
Rana systoma, *Schneid. Hist. Amph.* i. p. 144; *Peters, Mon. Berl. Ac.* 1863, p. 82.
Engystoma marmoratum, *Cuv. R. A.*; *Guérin, Icon. Rept.* pl. 27. f. 3.
Systoma leschenaultii, *Tschudi, Batr.* p. 86.
Uperodon marmoratum, *Dum. & Bibr.* p 749.
Cacopus systoma, *Günth. Rept. Brit. Ind.* p. 415.
Systoma marmoratum, *Steindachn. Novara, Amph.* p. 36.
? Pachybatrachus petersii, *Keferst. Arch. f. Naturg.* 1868, p. 274, pl. 6. f. 8–10.



Sternal apparatus.

Habit very stout. Head small; mouth small; snout rounded, without canthus rostralis, as long as or slightly longer than the diameter of the orbit; interorbital space twice or not quite twice the width of the upper eyelid. Fingers moderate, first a little shorter than second; toes rather short, webbed at the base; subarticular tubercles generally rather indistinct; two strong, compressed, shovel-shaped, metatarsal tubercles, inner very large, as long as second toe. Hind limb short. Skin smooth, upper surfaces sometimes tubercular. Olive or pinkish brown above, marbled with blackish brown; beneath whitish, immaculate. Male with a subgular vocal sac.

India.

a–c. ♂ & hgr.	Madras.	T. C. Jerdon, Esq. [P.].
d. ♀, skeleton.	Madras.	T. C. Jerdon, Esq. [P.].
e. Several spec.: ♂, ♀, hgr., & yg.	Balarangam Hills.	Col. Beddome [C.].
f–h. ♀ & hgr.	Plains of India.	Col. Beddome [C.].
i. ♀.	India.	
k. ♂.	——?	Sir A. Smith [P.].

2. Cacopus globulosus.

Cacopus globulosus, *Günth. Rept. Brit. Ind.* p. 416, pl. 26. f. K; *Anders. Proc. Zool. Soc.* 1871, p. 201.
Systoma globulosum, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 194.

Differs from the preceding in the following points:—Habit stouter, globular; snout longer (measuring nearly twice the orbital diameter), with distinct but obtuse canthus rostralis; interorbital space three times the width of the upper eyelid; inner metatarsal tubercle longer than second toe. Brown, uniform or spotted with darker.

Madras Presidency.

a, b. ♀ & yg.	Russelconda.	Dr. Trail [P.]. (Types.)
c–d. ♀ & hgr.	Russelconda.	Col. Beddome [C.].

15. GLYPHOGLOSSUS.

Glyphoglossus, *Günth. Proc. Zool. Soc.* 1868, p. 483.

Pupil erect. Tongue elongate, notched behind and in front, divided into two lateral halves by a deep groove, extensively free behind, slightly so in front. A papilla in the median line of the hinder part of the palate; a denticulated cutaneous ridge across the palate, in front of the œsophagus. Tympanum hidden. Fingers free; toes webbed, the tips not dilated. Precoracoids and omosternum absent; sternum a cartilaginous plate. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

India.

1. Glyphoglossus molossus.

Glyphoglossus molossus, *Günth. l. c.* pl. 38. f. 1.

Head very short, crown convex; mouth very narrow; canthus rostralis none; eye very small; the fleshy part of the lower jaw swollen, truncated in front, forming a semicircular disk. Limbs very short. Fingers short, pointed, first and second equal, fourth very short; toes short, pointed, entirely webbed; subarticular tubercles distinct; two metatarsal tubercles, the inner extremely large, compressed, sharp-edged, the outer small, rounded. Skin smooth. Uniform brownish olive above, sides and limbs finely marbled with brown; lower parts whitish, immaculate.

Birmah.

a. ♀ (?).	Pegu.	W. Theobald, Esq. [C.]. (Type.)

16. BREVICEPS.

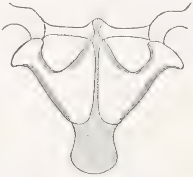
Breviceps, *Merr. Tent.* p. 178; *Dum. & Bibr.* viii. p. 752; *Cope, Nat. Hist. Rev.* 1865, p. 102, *and Journ. Ac. Philad.* (2) vi. 1867, p. 191.
Systoma, *Wagl. Syst. Amph.* p. 205; *Tschudi, Batr.* p. 47.

Pupil horizontal. Tongue oval, entire and free behind. Palate papillose. Tympanum hidden or slightly distinct. Fingers and toes free, the tips not dilated. Outer metatarsals united. Coracoids very much dilated; precoracoids well developed; no omosternum; sternum very small, cartilaginous. Sacral vertebra with very strongly dilated diapophyses, confluent with coccygeal style. Terminal phalanges simple.

Africa.

1. Breviceps gibbosus.

Breviceps gibbosus, *Günth. Cat.* p. 53.
Seba, ii. 37. 3.
Bufo acephalus, *Klein, Quadr. Disp.* p. 121.
Rana gibbosa, *Linn. Mus. Ad. Frid.* p. 48, *and S. N.* p. 355.
Bufo gibbosus, *Laur. Syn.* p. 27; *Latr. Rept.* ii. p. 119; *Daud. Rain.* p. 80, pl. 29. f. 1, pl. 35. f. 2, *and Rept.* viii. p. 158.
Breviceps gibbosus, *Merr. Tent.* p. 178; *Gravenh. Delic.* p. 69; *Dum. & Bibr.* p. 754; *Smith, Ill. S. Afr., Rept., App.* p. 27.
Engystoma dorsatum, *Cuv. R. A.*
—— granosum, *Cuv. R. A.*
Systoma breviceps, *Wagl. Syst. Amph.* p. 205; *Tschudi, Batr.* p. 86.



Sternal apparatus.

Habit extremely stout. Head very short; snout indistinct; mouth small; eyes rather small, directed forwards. Limbs very short; first and second fingers nearly equal; outer toe not longer than inner; subarticular tubercles distinct; a very large shovel-shaped inner metatarsal tubercle. Upper surfaces with small warts; belly granulate. Brown above, with a broad brownish-yellow serrated dorsal band; an obsolete lateral streak of the same colour.

S. Africa.

a. Adult.	S. Africa.
b, c. Young.	S. Africa.
d. Adult.	Cape of Good Hope.

2. Breviceps verrucosus.

Breviceps verrucosus, *Günth. Cat.* p. 52.

Breviceps verrucosus, *Rapp, Arch. f. Naturg.* 1842, p. 289, pl. 6. f. 5; *Smith, Ill. S. Afr., Rept., App.* p. 27; *Steindachn. Novara, Amph.* p. 38.

Snout more or less distinct. Entirely covered with distinctly porous granular glands. Brown, with or without yellowish spots. Perhaps not specifically distinct from the preceding.

S. Africa.

a, b. ♂ ♀.	S. Africa.	
c. Hgr.	Cape of Good Hope.	Sir A. Smith [P.].
d–f. ♂ ♀.	Kaffraria.	F. P. M. Weale, Esq. [P.].

3. Breviceps mossambicus.

Breviceps mossambicus, *Peters, Arch. f. Naturg.* 1855, p. 58.

Skin quite smooth, or indistinctly glandular on the head and front part of the back. Brown or blackish above; a dark oblique streak below the eye.

E. Africa.

a. ♂.	Mossambique.	Prof. Peters [P.].
b. ♂.	Zambesi River.	
c. ♂.	River Donda.	

17. RHOMBOPHRYNE.

Rhombophryne, *Boettg. Zool. Anz.* 1880, p. 567.

Pupil —— ? Tongue large, broad, and very long, entire, free on the sides, longitudinally grooved. A non-interrupted series of palatine teeth. A cutaneous fold across the palate, between the choanæ. Tympanum concealed. Fingers and toes free, the tips not dilated.

Madagascar.

The sternal structure is not known. But as Dr. Boettger has described this genus as allied to *Breviceps*, it is provisionally placed here.

1. Rhombophryne testudo.

Rhombophryne testudo, *Boettg. l. c.* p. 568.

Habit stout. Head very broad and short; snout very obtuse; mouth small; eyes small. Skin glandular, the glandules spinulose on the snout and on the chin; a fold from the eye to the shoulder. Greyish brown above, the glandules and folds lighter; a blackish streak on the loreal and temporal regions; hinder side of thighs white, distinctly separated from the inferior side by a blackish zone. Yellowish brown beneath, indistinctly vermiculated with whitish.

Nossi Bé.

18. HEMISUS *.

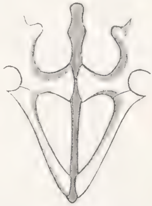
Hemisus, *Günth. Cat.* p. 47; *Cope, Nat. Hist. Rev.* 1865, p. 100, *and Journ. Ac. Philad.* (2) vi. 1867, p. 199.
Kakophrynus, *Steindachn. Sitz. Ak. Wien,* xlviii. 1863, p. 191.

Pupil erect. Tongue subtriangular, broader in front. A cutaneous ridge across the palate, between the choanæ, and another in front of the œsophagus. No tympanum. Fingers free; toes free or slightly webbed at the base, the tips not dilated. Outer metatarsals united. Coracoids and precoracoids subequal in bulk; precoracoids horizontal, coracoids very obliquely directed backwards, latter connected with former by the simple epicoracoid cartilage; omosternum cartilaginous; sternum rudimentary. Diapophyses of sacral vertebra slightly dilated. Terminal phalanges simple.

Africa.

1. Hemisus guttatum.

Hemisus guttatum, part., *Günth. Cat.* pp. 47 & 137.
Engystoma guttatum, *Rapp, Arch. f. Naturg.* 1842, p. 290, pl. 6. f. 3 & 4; *Smith, Ill. S. Afr., Rept., App.* p. 27.



Sternal apparatus.

Habit stout. Head small; snout rather pointed, prominent, cuneiform; mouth small; lower jaw with three prominences in front; eye small; interorbital space broad. Fore limb short, clumsy, adapted for burrowing; fingers very short, pointed, first and second equal, fourth shorter. Hind limb short, the tarso-metatarsal articulation marking the eye; toes short, pointed, free, without subarticular tubercles; a small inner metatarsal tubercle. Skin smooth; a fold across the head, behind the eyes. Brown above, with round whitish spots. Male with a subgular vocal sac.

S. Africa.

a. ♂.	Natal.	Sir A. Smith [P.].

2. Hemisus sudanense.

Hemisus guttatum, part., *Günth. Cat.* pp. 47 & 137.
? Engystoma marmoratum, *Peters, Arch. f. Naturg.* 1855, p. 58.

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* *Hemisus obscurus*, Grandid. Ann. Sc. Nat. (5) xv. a. 20, p. 11.—Madagascar.

Kakophrynus sudanense, *Steindachn. Sitz. Ak. Wien,* xlviii. p. 191 pl. 1. f. 10-13.
Hemisus sudanense, *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 284.

Differs from the preceding species in the following points :—Snout acutely pointed: toes with a distinct rudiment of web: metatarsal tubercle large, shovel-shaped; subarticular tubercles more or less distinct. Brownish or olive above, marbled with blackish; sides sometimes spotted with white; sometimes a light vertebral line.

E. and W. Africa.

a. Hgr.	Kordofan.	
b. ♂.	Coast of Guinea.	Sir A. Smith [P.]. (As *Engystoma guineense.*)
c. ♀.	Benguela.	J. J. Monteiro, Esq.
d. ♀.	W. Africa.	
e. Hgr.	Africa.	Sir A. Smith [P.]. (As *Engystoma vermiculatum.*)
f. Adult, bad state.	Africa.	(From the stomach of a *Leptodira rufescens.*)

The following genera probably belong to this family; but as the sternal structure has not been described, I cannot refer them to their proper place:—

Xenorhina, Peters, Mon. Berl. Ac. 1863, p. 82.

"Habit of *Engystoma*; toes free, with distinct disks; fingers free, without disks; jaws and palate toothless; tongue broad, heart-shaped, adherent everywhere except a little in front; end of snout warty, nostrils lateral, at the tip of the snout; tympanum distinct; no parotoids. Palmar and plantar surfaces smooth, without tubercles. Diapophyses of sacral vertebra dilated."

X. oxycephala, Peters, l. c. (*Bombinator oxycephalus*, Schlegel, Handl. Dierk. ii. p. 58, t. iv. f. 74).—New Guinea.

Adenomera (Fitz.), Steindachn. Novara, Amph. p. 37.

"Head rather small, indistinct from the body; snout distinct, pointed; fingers and toes free; tongue narrow, elongate, entire; tympanum distinct; a large, flat gland on the loins; prominence of the first cuneiform bone elongate, pointed, small; no vomerine nor maxillary teeth; diapophyses of the sacral vertebra weak, triangular."

A. marmorata (Fitz.), Steindachn. l. c.—Brazil.

4. DYSCOPHIDÆ.

Upper jaw toothed; diapophyses of sacral vertebra dilated.

The characters of this family are the same as those of the preceding, except that the upper jaw is furnished with teeth. *Calluella* may be considered a toothed *Hypopachus*, and *Cophyla* a toothed *Callula*. The precoracoids are either very weak, not taking any share in the formation of the glenoid cavity, or absent. There is no fronto-parietal fontanelle. The pupil is erect.

Synopsis of the Genera.

Precoracoids present; sternum very large; tips of fingers and toes not dilated .... 1. **Dyscophus**, p. 180.

Precoracoids present; sternum small; tips of fingers and toes not dilated .... 2. **Calluella**, p. 181.

Precoracoids none; sternum small; tips of fingers and toes dilated. 3. **Cophyla**, p. 182.

1. DYSCOPHUS.

Dyscophus, *Grandid. Ann. Sc. Nat.* (5) xv. 1872, a. 20, p. 10.

Pupil erect. Tongue oval, entire and free behind. Vomerine teeth in a long series across the palate. A cutaneous, denticulated fold across the palate, between the choanæ. Tympanum distinct or hidden. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. Coracoids strong; precoracoids weak, imperfectly ossified, resting upon coracoids; omosternum cartilaginous; sternum a very large anchor-shaped cartilaginous plate. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

Madagascar.

1. Dyscophus insularis.

Dyscophus insularis, *Grandid. l. c.*
Kaloula guineti, *Grandid. Ann. Sc. Nat.* (6) ii. a. 6, *and Bull. Soc. Philom.* (7) i. p. 41.

Vomerine teeth in a long transverse series, interrupted in the middle. Tympanum hidden. A shovel-shaped metatarsal tubercle. Head and body smooth, flanks and belly granular. Reddish brown above, vermiculated with darker brown; the markings bordered with very narrow yellow lines; flanks reddish; belly reddish brown.

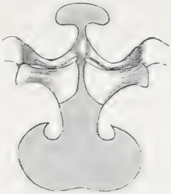
Madagascar.

? *a*. Skin. Madagascar.

2. Dyscophus antongilii.

Dyscophus insularis, var. antongilii, *Grandid. Bull. Soc. Philom.* (7) i. p. 41.
—— sanguineus, *Boettger, Zool. Anz.* 1880, p. 567.

Vomerine teeth in a long, scarcely interrupted series across the palate, behind the choanæ. Snout short, rounded; canthus rostralis slightly distinct; interorbital space a little broader than the upper eyelid; tympanum distinct, vertically oval, its vertical diameter two thirds the greatest diameter of the eye. First and second fingers equal; toes one-third webbed; tips of fingers and toes blunt; subarticular tubercles well developed; inner metatarsal tubercle rather strong, oval, compressed, with blunt edge; no outer tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches in front of the eye. Skin of upper surfaces smooth or indistinctly tubercular, strongly porous; upper eyelid tubercular; a fold uniting the hinder edges of the upper eyelids; another from the eye to the shoulder; a broad glandular fold from the eye to near the groin: lower surfaces smooth. Beautiful magenta-red above; a purplish streak beneath the glandular lateral fold; yellowish white beneath, with very minute grey specks.


Sternal apparatus.

Madagascar.

a-c. ♀. Antongili Bay.

2. CALLUELLA.

Calluella, *Stoliczka, Proc. As. Soc.* 1872, p. 146.

Pupil erect. Tongue oval, entire and free behind. Vomerine teeth in a transverse interrupted series across the palate. Two cutaneous folds across the palate, the front one between the choanæ. Tympanum hidden. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. Coracoids strong; precoracoids very weak, imperfectly ossified, resting upon coracoids: no omosternum; sternum a small cartilaginous plate. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

India.

1. Calluella guttulata.

Megalophrys guttulata, *Blyth, Journ. As. Soc.* xxiv. p. 717.
Callula guttulata, *Günth. Proc. Zool. Soc.* 1868, p. 490, pl. 40. f. 1.
Calluella guttulata, *Stoliczka, l. c.*

Head small; snout short, rounded; interorbital space broader than the upper eyelid. Fingers moderate, first a little shorter than second; toes moderate, not one-third webbed; tips of fingers and toes blunt; subarticular tubercles well developed; inner metatarsal tubercles large, shovel-shaped; outer metatarsal tubercle none or indistinct. The hind limb being carried forwards along the body, the metatarsal tubercle reaches the eye. Skin perfectly smooth; a rather indistinct fold across the head, behind the eyes; another fold from the eye to the shoulder. Upper parts pink or yellowish olive, coarsely marbled with brown, the brown marks edged by a black line; a long transverse black mark across the vent and hinder surface of thighs; beneath immaculate; the male's throat blackish. Latter with a subgular vocal sac.

Pegu; Birmah.

a–d. ♂ ♀.	Pegu.	W. Theobald, Esq. [C.].
e. ♀.	Birmah.	W. Theobald, Esq. [C.].
f. Hgr.	—— ?	R. C. Beavan, Esq. [P.].

3. COPHYLA.

Cophyla, *Boettger, Zool. Anz.* 1880, p. 281.

Pupil erect. Tongue oval, entire and free behind. A long series of palatine teeth behind the choanæ. Tympanum more or less indistinct. Fingers free, toes free or webbed at the base, the tips dilated into regular disks. Outer metatarsals united. Coracoids strong; precoracoids and omosternum absent; sternum cartilaginous, very small. Diapophyses of sacral vertebra slightly dilated. Terminal phalanges T-shaped.

Madagascar.

1. Cophyla notosticta.

Callula notosticta, *Günth. Ann. & Mag. N. H.* (4) xix. p. 316, pl. 16. f. C.

Snout short, rather pointed, with distinct canthus rostralis; interorbital space broader than the upper eyelid. Fingers moderate, first much shorter than second, the tips dilated into large disks; toes moderate, free, the disks smaller than those of the fingers; subarticular tubercles rather indistinct; metatarsal tubercle indistinct. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Skin everywhere smooth; a narrow glandular fold from the eye along the side of the body. Upper parts pinkish brown, with symmetrical dark-brown markings; a pair of whitish, black-edged dots on the sacral region; sometimes a few other pairs of similar spots on the head and back; sides of head blackish; canthus rostralis, edge of upper eyelid, and glandular lateral fold pink; beneath light brown, indistinctly speckled with darker. Male with a subgular vocal sac.

Madagascar.

a. ♂.	Mahanoro.	Types.
b–c. ♀ & hgr.	Anzahamara.	

2. Cophyla phyllodactyla.

Cophyla phyllodactyla, *Boettg. l. c.*

Snout obtuse. Toes webbed at the base. Skin smooth, granular on the belly and under the thighs; a fold from the eye to the arm. Greyish brown above, with transverse blackish-brown Λ- or ΛΛ-shaped spots; legs more or less distinctly cross-barred.

Nossi Bé.

B. ARCIFERA.

Bufoniformia, part., and Arcifera, *Cope, Nat. Hist. Rev.* 1865, *and Journ. Ac. Philad.* (2) vi. 1866.

Bufoniformia and Arcifera, *Cope, Check-list of N.-Amer. Batr. & Rept., Bull. U.S. Nat. Mus.* i. 1877.

Coracoids and precoracoids divergent, connected by an arched cartilage (the epicoracoid), which is free from, and generally overlaps, the corresponding cartilage of the opposite side.

5. CYSTIGNATHIDÆ.

Ranidæ, part., Cystignathidæ, part., Discoglossidæ, part., Alytidæ, part., Uperoliidæ, Bombinatoridæ, part., Hylodidæ, part., *Günth. Cat. Batr. Sal.*

Scaphiopodidæ, part., Cystignathidæ, *Cope, Nat. Hist. Rev.* 1865.

Cystignathidæ, *Cope, Journ. Ac. Philad.* (2) vi. 1866.

Bombinatoridæ, part., Plectromantidæ, Alytidæ, part., Polypedatidæ, part., Ranidæ, part., Discoglossidæ, part., *Mivart, Proc. Zool. Soc.* 1869.

Upper jaw toothed; diapophyses of sacral vertebra not, or but slightly, dilated; terminal phalanges never claw-shaped.

The omosternum is always destitute of a bony style, and may be rudimentary. The sternum is generally a cartilaginous or more or less ossified plate, and provided with a bony style in a few genera only.

The vertebræ are procœlian and without ribs. The diapophyses of the sacral vertebra are usually cylndrical, sometimes slightly dilated, most conspicuously so in *Chiroleptes* and allies. Nevertheless these genera distinctly belong to this family, and cannot be confounded with the *Pelobatidæ*, in which the dilatation of the sacral diapophysis is much stronger, or with the *Hylidæ*, in which the terminal phalanges are quite different. The coccyx is articulated by two condyles, and without diapophyses.

A great number of species have a fronto-parietal fontanelle, but, as in *Bufo* and *Hyla*, this character does not seem to me to be of generic importance. A few species have the skin of the head replaced by a rugose cranial ossification, *Calyptocephalus* showing one of the highest degrees of cranial ossification which a Frog can attain.

The auditory organ exhibits all the possible degrees of development. Several genera, viz. *Crinia*, *Hylodes*, &c., prove that too great an importance has been attached to the modifications of this organ, and in most cases I must refuse to admit them as generic characters.

The distal phalanges are simple, or with divergent terminal processes.

Most of the Australian representatives of this family, and a few of the American, have the pupil erect.

The *Cystignathidæ* include arboreal, aquatic, terrestrial, and burrowing types.

Synopsis of the Genera.

I. Outer metatarsals completely separated: sternum without bony style; toes webbed.

Pupil horizontal; first finger opposite to the others; tongue circular. 1. **Pseudis**, p. 185.

Fingers webbed: tips of fingers and toes dilated into large disks. 2. **Centrolene**, p. 187.

Pupil erect; tongue circular; tympanum distinct. 3. **Mixophyes**, p. 188.

Tongue oval: tympanum hidden .. 4. **Cyclorhamphus**, p. 189.

II. Outer metatarsals united or incompletely separated.

A. Sternum without bony style; toes webbed.

Pupil horizontal; head rough, entirely bony, the orbit completely enclosed; tongue entire .... 5. **Calyptocephalus**, p. 189.

Pupil horizontal; derm of head free from cranial ossification; tongue entire .... 6. **Telmatobius**, p. 190.

Pupil horizontal; tongue nicked behind. 10. **Ceratophrys**, p. 221.

Pupil vertical; first finger opposite to the others; diapophyses of sacral vertebra slightly dilated .. 23. **Chiroleptes**, p. 267.

Pupil vertical: tympanum concealed; diapophyses of sacral vertebra slightly dilated .... 24. **Heleioporus**, p. 271.

B. Sternum without bony style; toes free, or nearly so.

1. Tips of fingers and toes dilated into regular disks; pupil horizontal.

Vomerine teeth; digital disks divided on their upper surface by a groove .... 7. **Elosia**, p. 193.

Vomerine teeth none; digital disks divided on their upper surface by a groove .... 8. **Phyllobates**, p. 194.

Vomerine teeth; digital disks not grooved. 9. **Hylodes**, p. 198.

2. Tips of fingers and toes not dilated.

Pupil horizontal; vomerine teeth; tongue subcircular. 17. **Borborocœtes**, p. 252.

Pupil horizontal: vomerine teeth in a transverse series behind the choanæ; tongue entirely adherent. 18. **Zachænus**, p. 257.

Pupil erect; vomerine teeth in a transverse series behind the choanæ; tongue subcircular ...... 19. **Limnodynastes**, p. 258.

Pupil horizontal; vomerine teeth; tongue suboval; diapophyses of sacral vertebra slightly dilated .. 20. **Cryptotis**, p. 262.

Pupil horizontal: vomerine teeth very slightly developed or absent; tongue elliptic; diapophyses of sacral vertebra slightly dilated. 21. **Crinia**, p. 263.

Pupil erect; vomerine teeth none; tongue elliptic; diapophyses of sacral vertebra slightly dilated .. 22. **Hyperolius**, p. 267.

C. Sternum with a bony style.

Pupil horizontal; tongue nicked behind; tympanum very distinct; diapophyses of sacral vertebra slightly dilated. 11. **Edalorhina**, p. 227.

Pupil horizontal; tympanum indistinct or hidden; vomerine teeth, if present, between the choanæ.. 12. **Paludicola**, p. 229.

Pupil horizontal; vomerine teeth behind the choanæ. 13. **Leptodactylus**, p. 237.

Tips of toes dilated into regular disks. 14. **Plectromantis**, p. 249.

Pupil erect; tongue slightly nicked. 15. **Limnomedusa**, p. 250.

Pupil erect; tongue entire; toes very long; sternal style broad. 16. **Hylorhina**, p. 251.

1. PSEUDIS.

Pseudis, (*Laur.*) *Wagl. Syst. Amph.* p. 203; *Tschudi, Batr.* p. 80; *Dum. & Bibr.* viii. p. 327; *Günth. Cat.* p. 5; *Cope, Nat. Hist. Rev.* 1865, p. 111, *and Journ. Ac. Philad.* (2) vi. 1866, p. 93.

Lysapsus, *Cope, Proc. Ac. Philad.* 1862, pp. 155 & 351, *and Journ. Ac. Philad.* (2) vi. 1866, p. 93.

Batrachichthys, *Pizarro, Arch. Mus. Nac. Rio Janeiro,* i. p. 31.

Pupil horizontal. Tongue circular, entire and slightly free behind. Vomerine teeth. Tympanum distinct. Fingers free, first opposite to the others; toes webbed to the tips; tips of fingers and toes pointed, or swollen into small disks. Outer metatarsals separated by web. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges simple.

S. America.

Synopsis of the Species.

I. Tips of fingers and toes pointed.

Tibio-tarsal articulation reaching the tip of the snout .... 1. *paradoxa*, p. 186.
Tibio-tarsal articulation reaching a good deal beyond the tip of the snout .... 2. *minuta*, p. 187.

II. Tips of fingers and toes swollen into small disks.

Tympanum half the size of the eye .... 3. *limellum*, p. 187.
Tympanum nearly as large as the eye .. 4. *mantidactyla*, p. 187.

1. Pseudis paradoxa.

Pseudis paradoxa, *Günth. Cat.* p. 5.
Merian, Ins. Sur. t. 71; *Linn. Mus. Ad. Frid.* p. 49; *Edwards, Phil. Trans.* li. p. 653, f. 15, *a*, *b*; *Seba*, i. 78, 15–21.
Rana paradoxa, *Linn. Syst. Nat.*; *Shaw, Zool.* iii. p. 120, pl. 36; *Daud. Rain.* p. 67, pls. 22 & 23, *and Rept.* viii. p. 130; *Merr. Tent.* p. 176; *Cuv. R. A.*; *Gravenh. Delic.* p. 34; *Griff. An. Kingd.* ix. p. 393.
Proteus raninus, *Laur. Syn. Rept.* p. 36.
Pseudis paradoxa, *Wagl. Syst. Amph.* p. 203; *Tschudi, Batr.* p. 80.
—— merianæ, *Dum. & Bibr.* p. 330, pl. 86. f. 2.

Vomerine teeth in two straight series between the choanæ. Snout tapering, subacuminate; interorbital space broader than the upper eyelid; tympanum three fourths the width of the eye. Fingers pointed; toes pointed, webbed to the tips, fourth little longer than third; subarticular tubercles very small; inner metatarsal tubercle conical; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth. Brownish above, indistinctly spotted with darker; hinder side of thighs brown-and-white marbled; under surface of thighs generally longitudinally striped with brown.

Guianas.

a. ♀.	Demerara.	Capt. Sabine [P.].
b, c, d, e, f, g, h. Larvæ.	Demerara.	
i. Larva.	Surinam.	Sir A. Smith [P.].
k. Larva.	Surinam.	
l–m, n, o–q. ♀ & larvæ.	S. America.	

2. Pseudis minuta. (PLATE XIV. fig. 1.)

Pseudis minuta, *Günth. Cat.* p. 6.
Pseudis minuta, *Peters, Mon. Berl. Ac.* 1863, p. 76; *Garman, Amer. Natur.* ii. 1877, p. 587, f. 97.

Differs from *P. paradoxa* by its much smaller size, its longer hind limbs, the tibio-tarsal articulation reaching a good deal beyond the tip of the snout. Snout rounded. An oblique white streak from the back edge of eye to the angle of mouth; a white stripe from the shoulder to the hypochondrium. Male with a subgular vocal sac.

Brazil.

a. ♂.	S. America.	C. Darwin, Esq. [P.]. (Type.)

3. Pseudis limellum.

Lysapsus limellum, *Cope, Proc. Ac. Philad.* 1862, p. 155; *Steindachn. Novara, Amph.* p. 50.
Pseudis minuta, *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 262, pl. 11. f. 2–4.

Vomerine teeth in two fasciculi behind the choanæ. Snout subacuminate, without canthus rostralis; interorbital space as broad as the upper eyelid; tympanum half the size of the eye. Toes entirely webbed; tips of fingers and toes dilated into very small disks; a small acute metatarsal tubercle. Hind limb very long; carried forwards along the body, the knee reaches nearly the tympanum, and the tibio-tarsal articulation far beyond the tip of the snout. Upper surfaces shagreened. Above reddish brown; hind limbs cross-barred. Very small.

Paraguay; Brazil.

a. ♀.	Brazil.

4. Pseudis mantidactyla.

Lysapsus mantidactyla, *Cope, Proc. Ac. Philad.* 1862, p. 352.

Tympanum nearly as large as the eye. Tips of toes very slightly dilated; inner metatarsal tubercle acute. Skin of back smooth, pustulous, most so posteriorly; skin of tibia and foot minutely roughened; several rows of acute rugosities on the former; beneath entirely smooth. Above uniform light brown; a yellowish band from axilla to femur; another above it on the lumbar region; femora cross-banded with brown above, and with three longitudinal brown bands on their posterior face. Male with two vocal vesicles.

Buenos Ayres.

2. CENTROLENE.

Centrolene, *Espada, An. Soc. Esp.* i. 1872, p. 87.

Pupil horizontal? Tongue heart-shaped, free behind. Vomerine teeth. Ear perfectly developed; tympanum distinct. Fingers and toes webbed, the tips dilated into large disks. Outer metatarsals separated? No omosternum; sternum a narrow cartilaginous plate. Terminal phalanges bifurcate.

Ecuador.

1. Centrolene geckoideum.

Centrolene geckoideum, *Espada, l. c.* p. 88, *and Viaj. Pacif., Vertebr.* pl. 2. f. 5.

Vomerine teeth in two oblique groups between the choanæ. Fingers half webbed, the membrane extending as a fringe to the disks; toes entirely webbed. Humerus with a strong spine. Skin of upper surfaces granular and tubercular. Greyish above; hands and feet darker.

Rio Napo, Ecuador.

3. MIXOPHYES.

Mixophyes, *Günth. Proc. Zool. Soc.* 1864, p. 46; *Cope, Nat. Hist. Rev.* 1865, p. 111, *and Journ. Ac. Philad.* (2) vi. 1866, p. 93.

Pupil vertical. Tongue circular, entire, free behind. Vomerine teeth. Tympanum distinct. Fingers free; toes webbed, the tips not dilated. Outer metatarsals separated by web. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges simple.

Australia.

1. Mixophyes fasciolatus.

Mixophyes fasciolatus, *Günth. Proc. Zool. Soc.* 1864, p. 46, pl. 7. f. 1, *and Ann. & Mag. N. H.* (3) xiv. p. 311; *Steindachn. Novara, Amph.* p. 10; *Keferst. Arch. f. Naturg.* 1868, p. 255, pl. 5. f. 6.

Vomerine teeth in two straight series between the choanæ. Head large; snout rounded; interorbital space as broad as the upper eyelid; tympanum three fourths the width of the eye. Fingers and toes slightly swollen at the tips; first finger slightly longer than second; toes two-thirds webbed; subarticular tubercles well developed; inner metatarsal tubercle elongate, oval, compressed; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth; a slight fold above the tympanum. Brownish olive above, indistinctly marbled with darker; a dark cross band between the eyes; a black band from the tip of the snout through the eye to behind the tympanum; limbs with narrow black cross bars. Male with a subgular vocal sac.

E. Australia.

a, b. ♂ ♀.	Clarence River.	G. Krefft, Esq. [P.].	(Types.)

4. CYCLORHAMPHUS.

Cyclorhamphus, *Tschudi, Batr.* p. 81.
Cyclorhamphus, sp., *Dum. & Bibr.* viii. p. 452.
Pithecopsis, (*Bibr.*) *Günth. Cat.* p. 22; *Cope, Nat. Hist. Rev.* 1865, p. 112, *and Journ. Ac. Philad.* (2) vi. 1866, p. 93.

Pupil horizontal? Tongue oval, entire and free behind. Vomerine teeth. Tympanum hidden. Fingers free; toes webbed, the tips not dilated. Outer metatarsals separated. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges simple.

Brazil.

1. Cyclorhamphus fuliginosus.

Pithecopsis fuliginosus, *Günth. Cat.* p. 22.
Cyclorhamphus fuliginosus, (*Bibr.*) *Tschudi, Batr.* p. 81; *Dum. & Bibr.* p. 454.

Vomerine teeth in two oblique series behind the choanæ. Toes two-thirds webbed; a single small metatarsal tubercle. Skin quite smooth; a large, flat, circular gland on each side. Uniform brownish; beneath finely whitish-spotted.

Brazil.

5. CALYPTOCEPHALUS.

Peltocephalus, *Tschudi, Batr.* p. 81.
Calyptocephalus, (*Bibr.*) *Dum. & Bibr.* viii. p. 447; *Günth. Cat.* p. 21; *Cope, Nat. Hist. Rev.* 1865, p. 112, *and Journ. Ac. Philad.* (2) vi. 1866, p. 93.

Pupil horizontal. Tongue circular, entire, free behind. Vomerine teeth. Cephalic derm involved in a rugose cranial ossification, the orbit being completely enclosed. Tympanum distinct. Fingers free; toes webbed, the tips not dilated. Outer metatarsals incompletely separated. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges simple.

Chili; Panama.

1. Calyptocephalus gayi.

Calyptocephalus gayi, *Günth. Cat.* p. 21.
Peltocephalus quoyii, *Tschudi, Batr.* p. 81.
Calyptocephalus gayi, *Dum. & Bibr.* p. 450; *Guichen. in Gay, Chile,* ix. p. 109, pl. 6; *Steindachn. Novara, Amph.* p. 15; *Espada, Viaj. Pacif., Vert.* p. 2.

Vomerine teeth in two nearly straight series between the choanæ. Head depressed; snout very short, rounded; eyes small, interorbital space much broader than the upper eyelid; tympanum nearly as large as the eye. First finger shorter than second; toes nearly entirely webbed; subarticular tubercles none; inner metatarsal tubercle oval, blunt; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the tympanum. Skin of the back with round and oval warts. Dark olive above, indistinctly maculated with blackish. Male with two external subgular vocal sacs.

Chili.

a–c, d–e. ♂ ♀.	Chili.
f. Skeleton.	Chili.

2. Calyptocephalus testudiniceps.

Phrynocerus testudiniceps, *Cope, Proc. Ac. Philad.* 1862, p. 157.
Calyptocephalus testudiniceps, *Cope, Nat. Hist. Rev.* 1865, p. 112.

Vomerine teeth in separate transverse series anterior to the inner margin of the choanæ. Space between the orbits slightly concave, wider than the diameter of the orbit; tympanum vertically oval, longest diameter equal to the length of the third phalanx of the third finger. Toes fully webbed, except the extent of the last two phalanges of the median. Skin with obtuse warts. Above bright yellowish and brownish green, marbled with black; subanal region blackish, spotted with yellow.

Panama.

6. TELMATOBIUS*.

Telmatobius, *Wiegm. Nov. Act.* 1835, p. 262; *Günth. Cat.* p. 42.
Cycloramphus, sp., *Dum. & Bibr.* viii. p. 455.
Cyclorhamphus, *Günth. Cat.* p. 21; *Cope, Nat. Hist. Rev.* 1865, p. 112, *and Journ. Ac. Philad.* (2) vi. 1866, p. 96.

Pupil horizontal. Tongue subcircular, entire and free behind. Vomerine teeth present or absent. Tympanum hidden or absent. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges simple.

W. S. America.

Synopsis of the Species.

I. No tympanic disk.

Vomerine teeth none .... 1. *peruvianus*, p. 191.
Vomerine teeth; labial integument largely free, and overhanging the lower jaw .. 2. *æmaricus*, p. 191.

II. A tympanic disk.

Toes nearly entirely webbed; first finger extending beyond second .... 3. *jelskii*, p. 191.
Toes half webbed; tibio-tarsal articulation not reaching the eye .... 4. *marmoratus*, p. 192.

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* *Telmatobius brasiliensis*, Steindachn. Verh. zool.-bot. Ges. Wien, 1864, p. 282, pl. 16. f. 3.—Brazil, probably Rio Janeiro.

Toes half webbed; tibio-tarsal articulation reaching in front of the eye	5. *pustulosus*, p. 192.
Toes shortly webbed; no metatarsal tubercle	6. *angustipes*, p. 192.

1. Telmatobius peruvianus.

Telmatobius peruvianus, *Günth. Cat.* p. 42.
Telmatobius peruvianus, *Wiegm. Nov. Act.* 1835, p. 262, pl. 22. f. 2; *Peters, Mon. Berl. Ac.* 1873, p. 413, pl. 2. f. 3.

Vomerine teeth none. Snout short, rounded; no tympanic disk. Toes incompletely webbed. Above with many very small horny warts. Above brown, with a darker longitudinal band, anteriorly crossed by two transverse streaks. Male without vocal sac, with blackish rugosities on the inner side of the first finger.

Peru.

2. Telmatobius æmaricus.

Cyclorhamphus æmaricus, *Cope, Proc. Ac. Philad.* 1874, p. 125, *and Proc. Amer. Philos. Soc.* xvii. 1877, p. 39.

Vomerine fasciculi minute, between the small choanæ. No tympanic disk. Toes half webbed; a free border on the inner side of the tarsus and outer side of outer toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches about the angle of the mouth. Skin smooth, except a few small tubercles on the occipital region; labial integument largely free and overhanging the lower jaw. Colour olive-brown above, lighter brown below; sometimes a few scattered yellow spots above. Male with numerous small horny points on the breast, and a large rugose plate on each thumb.

Peru.

3. Telmatobius jelskii.

Pseudobatrachus jelskii, *Peters, Mon. Berl. Ac.* 1873, p. 415.
? Cyclorhamphus culeus, *Garman, Bull. Mus. Comp. Zool.* iii. p. 276, pl. 1.

Vomerine teeth in two small groups between the choanæ; the latter relatively smaller than in *T. marmoratus*. Snout short, rounded; interorbital space broader than the upper eyelid. Tympanum small, hidden. Fingers blunt, first extending beyond second; toes blunt, nearly entirely webbed; subarticular tubercles small, a small oval inner, and a flat rounded outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or nearly so far. Skin smooth, glandular and distinctly porous above. Upper surfaces blackish olive; lower surfaces yellowish, marbled with brown. Male without vocal sac; during the breeding-season the inner side of the first finger is covered with blackish rugosities.

Peru; Ecuador.

a–e. ♂ ♀.	W. Ecuador.	Mr. Fraser [C.].
f. ♀.	Cuenca.	Mr. Fraser [C.].
g–h. ♂ ♀.	Intac, Ecuador.	Mr. Buckley [C.].

4. Telmatobius marmoratus.

Cyclorhamphus marmoratus, *Günth. Cat.* p. 21.
Cycloramphus marmoratus, *Dum. & Bibr.* p. 455.

Vomerine teeth in two small groups between the choanæ, which are large. Snout short, rounded; interorbital space as broad as the upper eyelid; tympanum small, hidden. Fingers pointed, first not extending beyond second; toes pointed, half webbed; subarticular tubercles small; a small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibiotarsal articulation does not reach the eye. Skin smooth; a flat parotoid gland, frequently indistinct. Brownish, marbled with black, often with small white spots. Male without vocal sac.

Chili; Peru.

a, b. Many sp.: ♂, ♀, and larvæ (bad state).	Guascona.	J. B. Pentland, Esq. [P.].
c. ♀.	Chili.	

5. Telmatobius pustulosus.

Cyclorhamphus pustulosus, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 39.

Vomerine patches very small. Tongue wider than long. Head large, flat; snout oblique; nostrils equally distant from the eye and the labial border; tympanum a vertical oval, whose long diameter is less than half that of the eye-slit, hidden. Fingers and toes elongate, the latter half webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth, except on the sides between the ilia round the vent, the superior face of the tibia, and the sole of the foot, where it is tubercular; limbs with small acute warts. Dark lead-colour everywhere, excepting the gular region and the tips of the lateral warts, which are dirty white: upper regions indefinitely shaded with brown and grey.

Tinta, Peru (11,400 feet).

6. Telmatobius angustipes.

Cyclorhamphus angustipes, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 38.

Vomerine teeth in two small fascicles close together, filling the narrow space between the inner nostrils. Snout short and rounded; nostril nearer the eye than the tip of the snout; tympanum vertically oval, one third the vertical diameter of the eye, hidden. First and second fingers equal; foot narrow; web between the toes short; no cuneiform tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the nostril. Skin perfectly smooth. Above dark plumbeous; below, a light lead-colour.

Juliaca, Peru (12,500 feet).

7. ELOSIA.

Elosia, *Tschudi, Batr.* p. 77; *Dum. & Bibr.* viii. p. 632; *Günth. Cat.* p. 84; *Cope, Nat. Hist. Rev.* 1865, p. 111.
Enydrobius, sp., *Wagl. Syst. Amph.* p. 202.
Enhydrobius, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 96.
Hylodes, sp., *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 248.

Pupil horizontal. Tongue subcircular, free behind. Vomerine teeth. Tympanum distinct. Fingers free; toes nearly free, the tips dilated into regular disks, the upper surface of which bears two rounded cutaneous divisions. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges T-shaped.

Brazil.

Synopsis of the Species.

Vomerine teeth on a level with the hinder edge of the choanæ; tarso-metatarsal articulation reaching beyond the tip of the snout . . . . 1. *nasus*, p. 193.
Tarso-metatarsal articulation not reaching beyond the tip of the snout . . . . 2. *bufonia*, p. 194.
Vomerine teeth on a level with the front edge of the choanæ . . . . 3. *vomerina*, p. 194.

1. Elosia nasus.

Elosia nasus, *Günth. Cat.* p. 84.
Hyla nasus, *Lichtenst. Verz. Doubl.* p. 106.
—— ranoides, *Spix, Spec. Nov. Test. Ran. Bras.* p. 32, pl. 6. f. 3: *Peters, Mon. Berl. Ac.* 1872, p. 207.
Enhydrobius ranoides, part., *Wagl. Syst. Amph.* p. 202.
Elosia nasuta, *Tschudi, Batr.* p. 77; *Dum. & Bibr.* p. 633; *Girard, U.S. Expl. Exped., Herp.* p. 65, pl. 4. f. 39–43.
Enhydrobius nasus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 96.
Hylodes truncatus, *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 248, pl. 17. f. 3.

Tongue subcircular, entire. Vomerine teeth in two short oblique series commencing on a level with the hinder edge of the choanæ. Snout rounded, obliquely truncate, with angular canthus rostralis; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum half the diameter of the eye. Fingers rather slender, first a little shorter than second; toes rather slender, with a slight web at the base which extends as a fringe along their sides; disks rather small;

subarticular tubercles small; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin smooth, slightly tubercular on the sides. Brown above, spotted with darker; hinder side of thighs marbled; limbs cross-barred; lower surfaces dirty white, the belly marbled with greyish.

Brazil.

a. ♀.	S. America.

2. Elosia bufonia.

Elosia bufonium, *Girard, Proc. Ac. Philad.* vi. 1853, p. 423, *and U.S. Expl. Exp., Herp.* p. 66, pl. 4. f. 23–27.

Differs from *E. nasus* chiefly in the shorter hind limbs, the tarsometatarsal articulation not extending beyond the tip of the snout.

Rio Janeiro.

3. Elosia vomerina.

Elosia vomerina, *Girard, Proc. Ac. Philad.* vi. 1853, p. 423, *and U.S. Expl. Exped. Herp.*, p. 69, pl. 4. f. 17–22.

Tongue subcircular, discoid, broadly emarginated posteriorly. Vomerine teeth in a transverse and rectilinear series immediately in advance of the anterior margin of the choanæ. Nostril a little nearer the tip of the snout than the eye. Tympanum proportionally larger than in the two preceding species. Inner metatarsal tubercle resembling a rudimentary toe. If the hind limb is carried forwards along the body, the middle of the tarsus reaches the tip of the snout. Skin perfectly smooth.

Rio Janeiro.

8. PHYLLOBATES[*].

Phyllobates, *Dum. & Bibr.* viii. p. 637; *Günth. Cat.* p. 90; *Cope, Nat. Hist. Rev.* 1865, p. 112, *and Journ. Ac. Philad.* (2) vi. 1866, p. 96.

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[*] 1. *Phyllobates glandulosus,* (Fitz.) Steindachn. Novara, Amph. p. 53, pl. 3. f. 1–4.—Brazil.

2. *Phyllobates peruensis,* Steindachn. l. c. p. 53, pl. 4. f. 8–11.—Peru. (Perhaps a *Hylodes.*)

3. *Phyllobates elegans.*—Dr. Günther has mentioned (Proc. Zool. Soc. 1868, p. 479), but not described, under this name a *Phyllobates* of which but one specimen—from Bogota—is in the collection. He thought this species might be the same as *Liuperus elegans*, Peters, Mon. Berl. Ac. 1863, p. 447; but from the original description of Prof. Peters, and from a subsequent note (eod. loc. 1869, p. 879), I am convinced that the specimen in the British Museum is altogether different from *Liuperus elegans,* which probably belongs to the genus *Paludicola,* as defined in the present Catalogue. I have not been able to refer this *Phyllobates* to any of the species described. But I think it more prudent to put it aside than establish a species upon insufficient material in a genus of which I have no direct knowledge.

Pupil horizontal. Tongue elliptic or subcordiform, free behind. Vomerine teeth none. Tympanum distinct. Fingers and toes dilated into regular disks, the upper surface of which bears two rounded cutaneous divisions. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges T-shaped.

Tropical America.

Synopsis of the Species.

I. Belly perfectly smooth.

Tympanum three fourths the diameter of the eye; snout rounded	1. *bicolor*, p. 195.
Tympanum two thirds the size of the orbit; snout rather acute; a delicate fold on the median line of the back	2. *limbatus*, p. 195.
Tympanum one half the diameter of the orbit; snout rather elongate, narrowed	3. *cystignathoides*, p. 196.
Tympanum one half the diameter of the eye; snout bread	4. *melanorhinus*, p. 196.
Tympanum one sixth of orbit; snout depressed	5. *hylæformis*, p. 196.

II. Belly granulate.

Tympanum a little more than one fourth the diameter of the eye; skin covered with small tubercles	6. *chalceus*, p. 197.
Tympanum two thirds the diameter of the eye; upper surfaces with small warts	7. *verruculatus*, p. 197.
Tympanum one eighth of orbit; snout projecting	8. *ridens*, p. 197.

1. Phyllobates bicolor.

Phyllobates bicolor, *Günth. Cat.* p. 90.
Phyllobates bicolor, *Bibron, in Ramon de la Sagra, Hist. Cuba, Rept.* pl. 29 bis; *Dum. & Bibr.* p. 638.

Snout rounded, with rounded canthus rostralis; nostril near the tip of the snout; tympanum distinct, three fourths the diameter of the eye. Skin perfectly smooth everywhere; angle of the mouth glandular. An indistinct outer metatarsal tubercle. Whitish fulvous above; dark brown or blackish beneath.

Cuba.

2. Phyllobates limbatus.

Phyllobates limbatus, *Cope, Proc. Ac. Philad.* 1862, p. 154.

Snout rather acute; nostril nearer the tip of the snout than the eye; tympanum two thirds the size of the orbit. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the eye. Skin smooth below, slightly granular upon the lateral, gluteal, and occipital regions; a delicate dermal fold on the median line of the back; palms and soles granular; outer metatarsal tubercle very small. Above chestnut; a white line extends from the end of the snout to the knee-joint; beneath this a broad black band extends to the same position; upper surfaces of hind limbs and anal region blackish brown; inferior surface of hind limbs and sides of belly spotted with brown; upper lip yellow. Very small.

Eastern Cuba.

3. **Phyllobates cystignathoides.**

Phyllobates cystignathoides, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 89.

Habit of *Hylodes rhodopis.* Snout rather elongate, narrowed, rounded, not projecting much beyond the lip; nostril nearer the tip of the snout than the eye; tympanum very distinct, half the diameter of the orbit. Disks of fingers and toes moderate; subarticular tubercles prominent; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the middle of the eye. Skin entirely smooth. Reddish brown above, leather-brown beneath; back thickly spotted with large blackish spots; sides marbled with lighter and darker; upper lip with a few pale spots; limbs obscurely cross-banded.

Cordova, Vera Cruz.

4. **Phyllobates melanorhinus.**

Phyllobates melanorhinus, *Günth. Cat.* p. 91.

Phyllobates melanorhinus, *Berthold, Götting. Nachr.* 1845, p. 43, *and Abhandl. Ges. Wiss. Götting.* iii. 1846, p. 14, pl. 1. f. 7; *Keferst. Götting. Nachr.* 1867, p. 354.

Snout broad, rounded, with angular canthus rostralis; tympanum distinct, half the diameter of the eye. First finger longer than second; disks of fingers and toes small. Skin everywhere smooth. Uniform greyish yellow above, blackish beneath; snout blackish; limbs variegated with blackish or grey. Male with a vocal sac.

Colombia.

5. **Phyllobates hylæformis.**

Phyllobates hylæformis, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 107, pl. 23. f. 8.

Habit of a *Hyla.* Snout rounded, depressed, not produced; canthus rostralis obtuse; loreal region oblique; interorbital space wide; tympanum one sixth of orbit. Disks of fingers and toes rather large. Skin smooth above and below. Colour above rich brown, divided on the vertebral line by a narrow red stripe; thighs light brown before and behind; abdomen and inferior surfaces of thighs and legs with a rosy or orange pigment. Male with a large rose-coloured vocal sac.

Pico Blanco, Costa Rica.

6. **Phyllobates chalceus.**

Phyllobates chalceus, *Peters, Mon. Berl. Ac.* 1873, p. 609.

Snout broad, hardly as long as the diameter of the eye; loreal region ascending gradually; canthus rostralis rounded; tympanum a little more than one fourth the diameter of the eye. First finger longer than second; no metacarpal nor metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or the tip of the snout. Skin covered with small tubercles, smaller on the belly than on the back. Brownish yellow above, yellowish beneath.

Pastassa Valley, Colombia.

7. **Phyllobates verruculatus.**

Phyllobates verruculatus, *Peters, Mon. Berl. Ac.* 1870, p. 650.

Snout a little longer than the diameter of the eye, with rounded canthus rostralis and vertical loreal region; tympanum very distinct, two thirds the diameter of the eye. First finger shorter than second; disks of fingers moderate, of toes small; subarticular tubercles well developed; two small metatarsal tubercles. Upper surface of body with small warts; throat and breast smooth; lower belly and inferior surface of thighs granular. Yellowish brown above, spotted and dotted with black; loreal and temporal regions blackish brown; brownish yellow beneath, variegated with dark.

Huanusco, Mexico.

8. **Phyllobates ridens.**

Phyllobates ridens, *Cope, Proc. Ac. Philad.* 1866, p. 131.

Tongue broad, truncate. Snout projecting beyond jaw; canthus rostralis strong; loreal region oblique; tympanum one eighth of orbit. Fingers and toes long, with well-marked disks. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Lower surfaces closely areolate. Colour above greyish brick-red, with a grey cross bar between the eyes, and others across the hind limbs; lip with grey bars; a grey line on the canthus rostralis, and a black spot on the tympanum; below pale brownish.

St.-Juan River, Nicaragua.

9. HYLODES[*].

Hylodes, *Fitzing. Classif. Rept.* p. 38; *Tschudi, Batr.* p. 77; *Dum. & Bibr.* viii. p. 619; *Günth. Cat.* p. 91; *Cope, Nat. Hist. Rev.* 1865, p. 111, *and Journ. Ac. Philad.* (2) vi. 1866, p. 96.
Enydrobius, sp., *Wagl. Syst. Amph.* p. 202.
Batrachyla, *Bell, Zool. Beagle, Rept.* p. 43; *Cope, Journ. Ac. Philad.* (2) vi. p. 97.
Craugastor, *Cope, Proc. Ac. Philad.* 1862, p. 153.
Lithodytes, *Cope, l. c., and Journ. Ac. Philad.* (2) vi. p. 96.
Euhyas, *Cope, l. c.*
Strabomantis, *Peters, Mon. Berl. Ac.* 1863, p. 405; *Cope, Journ. Ac. Philad.* (2) vi. p. 96.
Epirhexis, *Cope, l. c.*
Leiyla, *Keferst. Arch. f. Naturg.* 1868, p. 296.
Limnophys, *Espada, Jorn. Sc. Lisb.* iii. 1870, p. 60.
Pristimantis, *Espada, l. c.* p. 61.

Pupil horizontal. Tongue subcircular or oval, entire or slightly nicked, and free behind. Vomerine teeth. Tympanum generally distinct. Fingers free; toes free or slightly webbed, with dilated tips. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges T-shaped.

Tropical America.

Synopsis of the Species.

I. Toes one-third webbed.
  Belly nearly smooth .... 1. *palmatus*, p. 201.
II. Toes free, or nearly so.
  A. Belly smooth.
    1. Tympanum perfectly distinct.
      a. Head moderately broad.
        α. Vomerine teeth in two fasciculi or short oblique series.
          * Tips of fingers and toes round disks.
            † Tympanum as large as the eye.
Tibio-tarsal articulation reaching the tip of the snout .... 5. *muricinus*, p. 203.

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[*] 1. *Batrachyla longipes*, Baird, U.S. Mex. Bound. Surv., Herp. pl. xxxvii. f. 1–3.—*Epirhexis longipes*, Cope, Journ. Ac. Philad. (2) vi. p. 96.—Mexico.
2. *Hylodes verrucosus*, Espada, Viaj. Pacif., Vert. pl. 3 bis. f. 1.
3. *Hylodes philippi*, id. ibid. f. 2.
4. *Hylodes diadematus*, id. ibid. f. 3.
5. *Hylodes rubicundus*, id. ibid. f. 4.
6. *Cyclocephalus lacrimosus*, id. ibid. f. 5..
7. *Hylodes lineatus*, Brocchi (nec Schneid.), Bull. Soc. Philom. (7) iii. p. 22. —Mexico.

†† Tympanum one half or two thirds the diameter of the eye.

Head nearly twice as long as the pelvis	2. *lanciformis*, p. 202.
Snout pointed, a little longer than the orbital diameter; disks of fingers and toes well developed	3. *berkenbuschii*, p. 202.
Snout subacuminate, as long as the orbital diameter; tips of fingers and toes scarcely dilated	4. *podiciferus*, p. 203.
Snout rather pointed, a little longer than the orbital diameter; disks of fingers and toes small; several fine linear glandular folds on the back	6. *rhodopis*, p. 203.
Snout subacuminate, longer than the orbital diameter; disks of fingers and toes well developed; no glandular lateral fold	7. *conspicillatus*, p. 204.
Snout subacuminate, longer than the orbital diameter; a narrow glandular lateral fold	8. *gollmeri*, p. 205.
Upper surfaces covered with granulation and glandular ridges, two of which form a)(on the back	9. *rugosus*, p. 205.

††† Tympanum not half the diameter of the eye.

Vomerine teeth in two oblique series, far behind the choanæ; tongue emarginate	10. *griseus*, p. 206.
Vomerine teeth in two small groups close to the hinder edge of the choanæ; tongue entire	11. *bocourtii*, p. 206.

** Tips of fingers and toes truncate.

Snout short, rounded	12. *augusti*, p. 206.

β. Vomerine teeth in two long, straight or curved transverse series.

Tympanum three fourths the diameter of the eye; upper surfaces tubercular	13. *lineatus*, p. 207.
Tympanum one half the diameter of the eye; tibio-tarsal articulation reaching the eye or a little beyond; hind limbs not cross-barred	14. *lentus*, p. 207.
Tympanum one half the diameter of the eye; tibio-tarsal articulation reaching hardly the eye; hind limbs cross-barred	15. *luteolus*, p. 208.

Tympanum one half the diameter of the eye; vomerine series not extending outwards beyond the external border of the choanæ; skin smooth .... 16. *planirostris*, p. 208.

Tympanum one half the diameter of the eye; vomerine series not extending outwards beyond the external border of the choanæ; numerous glandular lines along the back .... 17. *binotatus*, p. 209.

b. Head broader than the body.

Vomerine teeth in two curved series .. 18. *cuneatus*, p. 209.

Tympanum large; interorbital space plane, without ridges.............. 19. *laticeps*, p. 210.

Tympanum one fourth the size of the eye; interorbital space plane, without ridges......................... 20. *melanostictus*, p. 210.

Tympanum as large as the eye; interorbital space with crest-like lateral ridges; back with dermal folds .... 21. *pelviculus*, p. 210.

Tympanum one third the diameter of the eye; interorbital space with crest-like lateral ridges; back with dermal folds .... 22. *megacephalus*, p. 211.

Tympanum one third the diameter of the eye; interorbital space with crest-like lateral ridges; back without dermal folds .... 23. *gulosus*, p. 211.

2. Tympanum indistinct; eustachian tubes minute.

Tibio-tarsal articulation reaching beyond the tip of the snout .... 24. *diastema*, p. 212.

B. Belly slightly granular.

No tympanic disk; eustachian tubes minute .... 25. *surdus*, p. 212.

Tympanum distinct, small; upper surfaces tubercular.................. 26. *glandulosus*, p. 212.

Tympanum distinct, small; fronto-parietals concave, with prominent ridges 27. *devillii*, p. 213.

C. Belly granular.

1. Head moderate.

a. Without serrated ridges.

α. Vomerine teeth in a zigzag row across the palate.

Disks moderate, transversely oval; head and body with granuliform warts.... 28. *ricordii*, p. 213.

Disks small; skin smooth above ...... 29. *oxyrhynchus*, p. 213.

β. Vomerine teeth in two groups, or oblique series, behind, and not outwards beyond the choanæ.

First toe as long as second .... 30. *auriculatus*, p. 214.
Vomerine teeth in two small oblique series; tympanum scarcely half the diameter of the eye .... 31. *martinicensis*, p. 214.
Head broader than the body .... 32. *varians*, p. 215.
Canthus rostralis rounded; tympanum one third the diameter of the eye.... 33. *bogotensis*, p. 215.
Tongue very large; tympanum one third the diameter of the eye........... 34. *bicumulus*, p. 215.
Snout longer than the diameter of the eye; disks much developed, truncate . 36. *cruentus*, p. 216.
Tympanum very small, one eighth the area of the eye; disks truncate .... 35. *cerasinus*, p. 216.
A strong fold across the chest; habit of *Hyla arborea* .... 37. *unistrigatus*, p. 217.
Fronto-parietals a little concave, their edges slightly prominent, their width almost twice that of the upper eyelid . 38. *buckleyi*, p. 217.
Tympanum hidden.................. 39. *whymperi*, p. 218.
Tympanum slightly distinct; tibio-tarsal articulation marking the shoulder .. 40. *curtipes*, p. 218.

γ. Vomerine teeth between the choanæ.

Fingers long; tips of fingers and toes truncate....................... 41. *leptopus*, p. 219.

b. Head with serrated ridges.

Vomerine teeth in two oblique, slightly arched series .... 42. *galdii*, p. 219.

2. Head very large, with strong superciliary bony ridges.

Tibio-tarsal articulation reaching the nostril .... 43. *sulcatus*, p. 220.
Tibio-tarsal articulation not reaching the nostril .... 44. *biporcatus*, p. 220.
Upper eyelid with a horn-like dermal appendage .... 45. *cornutus*, p. 220.

1. Hylodes palmatus.

Leiyla güntherii, *Keferst. Arch. f. Naturg.* 1868, p. 296, pl. 9. f. 4 & 5.
Liyla rugulosa, *Cope, Proc. Amer. Philos. Soc.* 1869, p. 160.
Hylodes rugosus, *Brocchi, Miss. Sc. Mex., Batr.* p. 54.

Tongue oval, emarginate. Vomerine teeth in two approximated fasciculi behind the choanæ. Snout acuminate, with distinct canthus rostralis; nostril much nearer the tip of the snout than the eye; tympanum distinct, half the size of the eye or more. Fingers moderate, first longer than second; toes long, one-third webbed; disks rather small; a single metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or beyond. Back, and especially the sides, tubercular; belly nearly smooth. Dark brown above; sometimes a pale vertebral line; below unspotted white, except gular region, which is brown.

Central America.

a–b. Hgr., bad state.	Dueñas.	O. Salvin, Esq. [C.].

Referred with some doubt to this species.

2. **Hylodes lanciformis.**

Lithodytes lanciformis, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 88.

Vomerine teeth in two fasciculi which are truncate posteriorly, and are situated behind the posterior line of the choanæ. Head nearly twice as long as the pelvis; snout narrowed and convex at the extremity; canthus rostralis well defined; nostril nearly terminal; tympanum distinct, two thirds the diameter of the eye. Disks of fingers small, of toes of medium size. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin quite smooth. Colour above dark ashen, penetrated with pink; a dark interorbital cross band, in front of which the snout is very pale; a broad black band extends from the tip of the snout across the tympanum, where it contracts to a narrow black line which extends from the superior border of the tympanum to near the middle of the side; a narrow white vertebral line; hind limbs pink with dusky cross bands; below immaculate.

Central America.

3. **Hylodes berkenbuschii.**

Hylodes berkenbuschii, *Peters, Mon. Berl. Ac.* 1869, p. 879; *Brocchi, Miss. Sc. Mex., Batr.* p. 52.

Tongue heart-shaped, slightly nicked behind. Vomerine teeth in two small oblique groups, close together, behind the choanæ. Snout pointed, a little longer than the orbital diameter, with distinct canthus rostralis; nostril much nearer the tip of the snout than the eye; tympanum distinct, two thirds the diameter of the eye. First finger a little shorter than second; toes with a rudimental web, extending as a narrow fringe to their tips; disks well developed; a dermal fold along the inner side of the tarsus; a single metatarsal tubercle. Skin smooth; sides with a few elongate warts; a strong glandular fold from the shoulder to the thigh. Brownish above, with darker spots; a triangular dark spot between the eyes. Limbs cross-barred; hinder side of thighs with small light and black spots.

Throat brown, with light specks; belly light yellowish brown, with dark spots.

Mexico.

4. Hylodes podiciferus.

Lithodytes podiciferus, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 107, pl. 23. f. 9.
Hylodes podiciferus, *Brocchi, Miss. Sc. Mex., Batr.* p. 56.

Tongue oval, slightly nicked behind. Vomerine teeth in two small oblique series behind the choanæ. Snout subacuminate, as long as the orbital diameter; nostril much nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum distinct, two thirds the diameter of the eye. Tips of fingers and toes scarcely dilated. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth. Four varieties of colour are distinguished by Cope. The present specimen is greyish, marbled with brown; sides of head and of front part of body, and a cross bar between the eyes, dark brown; a light vertebral line; hind limbs cross-barred.

C. America.

a. Young. Neighbourhood of Nazu. Messrs. Salvin and Godman [P.].

5. Hylodes muricinus.

Lithodytes muricinus, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 108.
Hylodes muricinus, *Brocchi, Miss. Sc. Mex., Batr.* p. 56.

The shorter hind limbs (the tibio-tarsal articulation reaching the tip of the snout) and larger tympanum (the size of which equals that of the eye), with the more transverse and widely separated vomerine teeth, distinguish this form from *H. podiciferus*.

Pico Blanco, Costa Rica.

[Lithodytes habenatus, *Cope, l. c.* p. 109.
Hylodes habenatus, *Brocchi, l. c.*

Is probably not specifically different from *H. muricinus*.

Pico Blanco.]

6. Hylodes rhodopis.

Lithodytes rhodopis, *Cope, Proc. Ac. Philad.* 1866, p. 323, *and Proc. Amer. Philos. Soc.* xi. 1869, p. 160.
Hylodes sallæi, *Günth. Proc. Zool. Soc.* 1868, p. 487, pl. 38. f. 3.
—— rhodopis, *Brocchi, Miss. Sc. Mex., Batr.* p. 50.

Tongue heart-shaped, slightly nicked behind. Vomerine teeth in two small oblique groups behind the choanæ. Snout rather pointed, a little longer than the orbital diameter, with angular canthus rostralis; nostril much nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum distinct, two thirds the diameter of the eye. Fingers moderate, first longer than second; toes quite free; disks small; subarticular tubercles well developed; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth, with several fine linear glandular folds—one from the eye above the tympanum to the shoulder, another from the eye to the centre of the back, and one or two on each side of the hinder part of the back. Brown above; a black stripe from the tip of the snout through the eye to the shoulder, sometimes a black spot in the centre of the back: anal region blackish; hind limbs indistinctly cross-barred.

Mexico.

a. Hgr.?	Mexico.	M. Sallé [C.]. (Type of *H. sallæi.*)
b. Hgr.?	Vera Paz.	O. Salvin, Esq. [C.].

7. **Hylodes conspicillatus.** (Plate XIV. fig. 2.)

Hylodes conspicillatus, *Günth. Cat.* p. 92.
Lithodytes conspicillatus, *Cope, Proc. Ac. Philad.* 1868, p. 115.

Tongue oval, slightly nicked behind. Vomerine teeth in two small groups behind the level of the choanæ. Snout subacuminate, with angular canthus rostralis; the orbital diameter equals the distance between the eye and the nostril, or two thirds of the distance between the former and the tip of the snout; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers moderate, first not extending beyond second; toes moderate, with a rudimentary web; disks and subarticular tubercles well developed; a small oval inner, and a rather indistinct rounded outer metatarsal tubercle. Hind limb very variable in length; carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or beyond. Skin smooth, granular round the belly and under the thighs. Brown or olive above, generally with chevron-shaped dark bands across the back; a dark stripe between the eyes; a blackish streak along the canthus rostralis and above the tympanum; limbs cross-barred; hinder side of thighs generally black-and-white marbled; sometimes a white stripe on each side of the back; whitish beneath, immaculate or marbled with brown. Male with an internal vocal sac.

Ecuador.

a. ♀.	Andes of Ecuador.	Mr. Fraser [C.]. (Type of *H. conspicillatus.*)
b, c–d, e, f, g, h. ♂ ♀.	W. Ecuador.	Mr. Fraser [C.].
i–k. ♂ ♀.	Intac, Ecuador.	Mr. Buckley [C.].
l. ♀.	Paitanga, Ecuador.	Mr. Buckley [C.].
m–n. ♀ & yg.	Sarayacu, Ecuador.	Mr. Buckley [C.].

8. Hylodes gollmeri.

Hylodes gollmeri, *Peters, Mon. Berl. Ac.* 1863, p. 40.
? Hylodes güntheri, *Steindachn. Verh. zool.-bot. Ges. Wien,* xiv. 1864, p. 246, pl. 17. f. 1, *and Novara, Amph.* p. 53, pl. 4. f. 1–7.

Tongue oval, slightly nicked behind. Vomerine teeth in two oblique series behind the choanæ. Snout subacuminate, prominent, with distinct canthus rostralis; nostril much nearer the tip of the snout than the eye: the orbital diameter equals the distance between the eye and the nostril; interorbital space broader than the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers moderate, first not extending beyond second: toes moderate, with a rudiment of web extending as a slight fringe along the sides of the toes; disks and subarticular tubercles well developed; a small oval inner, and a rather indistinct rounded outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches the tip of the snout or beyond. Skin smooth, or with very small scattered tubercles on the back, sides, and eyelids; a narrow glandular lateral fold from the eye to the sacral region; belly smooth. Brown or olive above; sides of head dark brown; a black streak along the canthus rostralis and over the temporal region; a dark spot between the eyes; sides with rather indistinct oblique dark stripes; limbs cross-barred; hinder side of thighs dark brown, spotted with white; throat speckled with brown.

Venezuela; Ecuador; (Brazil?).

a, b. ♀.	Quito.	
c. ♀.	Sarayacu, Ecuador.	Mr. Buckley [C.].

From Dr. Steindachner's description and figures I cannot find a single structural character differentiating his *H. güntheri* from this species, and am therefore inclined to regard both as identical.

9. Hylodes rugosus.

Hylodes rugosus, *Peters, Mon. Berl. Ac.* 1873, p. 610.

Tongue rounded behind. Vomerine teeth in two small groups behind the choanæ. Tympanum half the size of the eye. Disks of fingers and toes much smaller than in *H. cruentus* and rounded. Upper surfaces covered with granulations of different size and longitudinal glandular ridges, two of which form a)(on the back; belly smooth. Black or blackish green above; between the anterior part of the eyes a light cross band; dark bars from the eye to the lip; on each side a light longitudinal stripe; limbs cross-barred; hinder side of thighs black, white-spotted; anterior lower surfaces black, white-spotted; lower belly, lower surface of thighs, soles, and the three inner toes white. Allied to *H. conspicillatus*.

Chiriqui.

10. Hylodes griseus.

Hyla grisea, *Hallow. Proc. Ac. Philad.* 1860, p. 485.
Hylodes griseus, *Cope, Proc. Ac. Philad.* 1863, p. 48; *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 245, pl. 17. f. 2.
? Hylodes fenestratus, *Steindachn. l. c.* pp. 249 & 552, pl. 16. f. 1.
Hylodes, sp.?, *Hensel, Arch. f. Naturg.* 1867, p. 161.
Hylodes henselii, *Peters, Mon. Berl. Ac.* 1870, p. 648.

Tongue oval, emarginate. Vomerine teeth in two short oblique series behind the choanæ. Snout rather elongate and rounded, longer than the orbital diameter; canthus rostralis strong; tympanum one fourth the extent of orbit. Disks of fingers and toes moderate; a single metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin of belly smooth. A W-shaped spot on the occiput; limbs cross-barred.

Brazil.

11. Hylodes bocourtii.

Hylodes bocourti, *Brocchi, Bull. Soc. Philom.* (7) i. p. 130, *and Miss. Sc. Mex., Batr.* p. 50, pl. 16. f. 2.

Tongue subcircular, entire. Vomerine teeth in two small groups, close to the hinder edge of the choanæ. Snout rounded, with rounded canthus rostralis; tympanum distinct, one third the diameter of the eye. First and second fingers of nearly equal length; toes with a rudiment of web; disks rather developed; a single metatarsal tubercle. Hind limb long. Skin smooth. A black temporal spot; two small black spots behind the scapulæ; arms marbled with black; hind limbs marbled with brown; greenish white beneath.

Coban, Guatemala.

12. Hylodes augusti.

Hylodes augusti, (*Dugès*) *Brocchi, Bull. Soc. Philom.* (7) iii. p. 21, *and Miss. Sc. Mex., Batr.* p. 52, pl. 16. f. 1.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two small groups somewhat behind the choanæ. Snout short, rounded; nostril near the tip of the snout; tympanum distinct, smaller than the eye. First finger longer than second; tips of fingers and toes truncate; (when at rest, this animal is said to bend its fingers and toes in the same way as a man bends his fingers in playing on the pianoforte, a position which I have noticed also in *Hylodes leptopus*;) two metatarsal tubercles. Skin minutely tubercular above, smooth beneath. Light yellow above, spotted with brown; limbs cross-barred.

Guanajuato and Tupataro, Mexico.

13. Hylodes lineatus.

Hylodes lineatus, part., *Günth. Cat.* p. 91.
Rana lineata, *Schneid. Hist. Amph.* p. 138; *Gravenh. Delic.* p. 44, pl. 8. f. 2.
—— fusca, *Schneid. l. c.* p. 130.
—— castanea, *Shaw, Zool.* iii. p. 128.
Bufo lineatus, *Daud. Rain.* p. 105, *and Rept.* viii. p. 138.
—— albonotatus, *Daud. Rept.* viii. p. 185.
—— schneideri, *Merr. Tent.* p. 177.
Hylodes lineatus, *Dum. & Bibr.* p. 625; *Günth. Proc. Zool. Soc.* 1859, p. 89.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two transverse straight or slightly arched series, behind and between the choanæ. Snout rounded, with indistinct canthus rostralis; nostril nearer the tip of the snout than the eye; the width of the eye equals its distance from the nostril; interorbital space broader than the upper eyelid; tympanum distinct, three fourths the diameter of the eye. Fingers moderate, first extending a little beyond second; toes moderate, quite free; disks of fingers and toes very small; subarticular tubercles well developed; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Upper surfaces covered with very small, closely set tubercles; lower surfaces smooth. Blackish brown above; a white stripe on each side of the back, on the upper eyelid and on the side of the snout, meeting its fellow on the tip of the snout; a large white spot on the loin; a few large white spots, sometimes confluent, on the hinder side of the thighs and the inner side of the legs; lower surfaces light brown, dotted with white. Male with a subgular vocal sac.

Guianas; Ecuador; Peru.

a. ♀.	Vryheits Lust, Demerara.	Rev. W. J. Turner [C.].
b. Several spec., ♀ & hgr.	Andes of Ecuador.	Mr. Fraser [C.].
c. ♂.	Canelos, Ecuador.	Mr. Buckley [C.].
d–f. ♀ & yg.	Moyobamba, Peru.	A. H. Roff [C.].

14. Hylodes lentus.

Hylodes lineatus, part., *Günth. Cat.* p. 91.
Hylodes lentus, *Cope, Proc. Ac. Philad.* 1862, p. 151.
—— riisei, *Reinh. & Lütk. Vidensk. Meddel.* 1863, p. 208.

Tongue elliptic, entire or slightly nicked behind. Vomerine teeth in two long arched series across the palate, behind the choanæ. Snout conical, truncate, a little longer than the orbital diameter; canthus rostralis moderate; nostril much nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers moderate, first and second equal; toes moderate, with a slight rudiment of web; disks very small; subarticular tubercles well developed; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or a little beyond. Skin smooth, sometimes minutely granular on the head and back. Light brown above, spotted or marbled with dark brown; a more or less defined light stripe on each side; hind limbs not cross-barred. Male with a subgular vocal sac.

West Indies.

a–d. ♂ ♀.	S. Domingo.	M. Sallé [C.].
e, f, g. ♀ & hgr.	S. Domingo.	
h–i. ♂ ♀.	St. Thomas.	Mus. Copenhag. [P.]. (As typical of *H. riisei.*)

15. Hylodes luteolus.

Hylodes luteolus, *Günth. Cat.* p. 93.
Litoria luteola, *Gosse, Nat. Soj. Jamaica,* p. 366, pl. 7.

Tongue elliptic, entire. Vomerine teeth in two long arched series across the palate, behind the choanæ. Snout conical, truncate, with moderate canthus rostralis, slightly longer than the orbital diameter; nostril much nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum distinct, nearly two thirds the diameter of the eye. Fingers moderate, first and second equal; toes moderate, with a rudimentary web; disks very small; subarticular tubercles well developed; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the orbit. Skin smooth, granular under the thighs; a ventral disk. Brown, dark-speckled: a dark-brown band from the tip of the snout through the eye to the shoulder; hind limbs cross-barred; sometimes a light vertebral line and another on the hinder side of the thighs: brownish beneath.

West Indies.

a, b. ♀.	Jamaica.	Mr. Gosse [P.].
c. ♀.	Jamaica.	Capt. Parry [P.].

16. Hylodes planirostris.

Hylodes planirostris, *Cope, Proc. Ac. Philad.* 1862, p. 153.

Tongue elongate, oval, slightly nicked. Vomerine teeth in two long curved series, commencing behind and opposite to the external border of the inner nares; they are separated by a considerable space mesially. Snout abruptly truncated; tympanum half the size of the eye. Disks of fingers and toes small; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above and below; sides rugose. General colour reddish brown; the loreal region, a band between the eyes, one above the tympanum, and some dorsal spots darker; beneath light brownish. Male with a subgular vocal sac.

New Providence Island, Bahamas.

17. Hylodes binotatus.

Rana binotata, *Spix, Test. Ran. Bras.* p. 31, pl. 20. f. 3.
Enydrobius abbreviatus, *Wagl. Syst. Amph.* p. 202.
Hylodes rugulosus, *Peters, Mon. Berl. Ac.* 1870, p. 648.
—— binotatus, *Peters, Mon. Berl. Ac.* 1872, p. 206.

Tongue entire or slightly nicked. Vomerine teeth in two transverse curved series behind the choanæ. Snout subacuminate, longer than the orbital diameter; canthus rostralis very distinct; nostril much nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum distinct, half the diameter of the eye. First finger much longer than second; toes quite free; disks very small; subarticular tubercles much developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Numerous glandular lines along the back; a fold above the tympanum; lower surfaces smooth. Brownish above; a dark chevron-shaped spot between the eyes; a dark streak from the tip of the snout through the eye to the shoulder; limbs cross-barred; uniform whitish beneath. Male with a subgular vocal sac.

Brazil.

a. ♂.	Rio Janeiro.	C. Darwin, Esq. [P.].

18. Hylodes cuneatus.

Hylodes cuneatus, *Cope, Proc. Ac. Philad.* 1862, p. 152.

Tongue elongate-oval, slightly nicked behind. Vomerine teeth in two curved series, which begin opposite and much behind the external border of the choanæ, and converge posteriorly. Head large, broader than the body; snout elongate, acute; tympanum round, half the size of the eye. Two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin of upper surfaces, except that of the snout, granulated; a slight dermal fold from the tip of the snout to the end of the coccyx, and another, very delicate, commencing behind each orbit, and descending upon the side, then ascending towards the iliac region; smooth beneath. Above blackish grey; snout lighter; a light line from the anterior border of orbit to labial commissure, and one from the posterior border to the tympanum; a light band from each supercilium to the coccygeal region; limbs indistinctly barred with brown; beneath whitish, very minutely punctulated with brown, except upon the abdomen. A variety is almost entirely black.

E. Cuba.

19. Hylodes laticeps.

Hylodes laticeps, *Günth. Cat.* p. 92.
Hylodes laticeps, *A. Dum. Ann. Sc. Nat.* (3) xix. p. 178; *Dum. & Bibr.* ix. p. 408, pl. 99; *Brocchi, Miss. Sc. Mex., Batr.* p. 49.

Tongue subcircular. Vomerine teeth in two small oblique series behind the choanæ. Head very large, broader than the body; snout subacuminate; tympanum large, higher than broad. First finger longer than second; toes webbed at the base; disks rather small. Skin smooth above and beneath; a glandular fold from the eye to the angle of the mouth, and another along each side of the back; ventral disk very distinct. Dark greenish brown above, yellowish white below.

Yucatan; Tehuantepec.

20. Hylodes melanostictus.

Lithodytes melanostictus, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 109, pl. 23. f. 10.
Hylodes melanostictus, *Brocchi, Miss. Sc. Mex., Batr.* p. 56.

Tongue subcircular, a little emarginate behind. Vomerine teeth in two short transverse series behind the choanæ. Head flat, wide; snout projecting a little; canthus rostralis distinct; nostril more than twice as far from orbit as from tip of snout; tympanum a rather narrow vertical oval, one fourth the size of the eye. First finger shorter than second; disks of fingers large, of toes moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin everywhere smooth. Brownish grey above, dirty white beneath; limbs cross-banded rather distantly with blackish, the bars extending on the front and back faces of the femur as well as on the upper surfaces; a white vertebral band, bounded on the sides at different places with blackish; a pink band extends from each tympanum to the end of the ilium, and is broadly bordered with black on the outer side, this colour extending on the sides of the animal as oblique black spots; a black streak from the tip of the snout through the eye, over the tympanum to the angle of the mouth; two black bars from the orbit to the lip.

Pico Blanco, Costa Rica.

21. Hylodes pelviculus.

Lithodytes pelviculus, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 89.

Vomerine teeth in short, approximated, transverse fasciculi behind the choanæ. Head short, very wide; snout not projecting, with distinct canthus rostralis; nostril terminal; lateral borders of fronto-parietals elevated into longitudinal crests, which on the vertex are abruptly incurved without meeting: tympanum distinct, a broad vertical oval, as large as the eye. Disks and subarticular tubercles of fingers and toes small. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth; two suprascapular longitudinal dermal folds, converging towards the middle line without meeting. General colour ashen grey; a large black spot below the eye, and another above and on the tympanum; a dark band with a pale superior border above each ilium; belly and concealed faces of hind limbs yellow, coarsely reticulated with blackish; throat thickly dusted with the same.

W. coast of Central America.

22. Hylodes megacephalus.

Lithodytes megacephalus, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 110, pl. 23. f. 11.

Tongue oval, entire. Vomerine teeth in two short approximated series entirely behind the choanæ. Head very large, broader than the body; canthus rostralis distinct; nostril nearer the tip of the snout than the eye; orbits oblique, the superciliary borders rising from the end of their anterior third into a strong ridge, which runs in a straight line and terminates abruptly in a slight thickening at the posterior border of the cranium; posterior half of the cranium above deeply grooved; tympanum distinct, vertically oval, one third the diameter of the eye. Limbs short. Toes entirely free; disks of fingers and toes small; a single metatarsal tubercle. Skin smooth above and beneath, with the following exceptions:—A dermal fold extends from each exoccipital region on each side of the back, pursuing a concave course to the middle of the transverse process of the sacrum; a similar fold extends from the vent on each side, in an oblique direction, to the end of the transverse sacral process; sides of body areolated. Light ash above; a black spot extends from the tympanum to the scapula, and sends a line to the eye; limbs cross-barred; hinder side of thighs black, marbled distally with ash; sole of foot black; lower surfaces white, marbled with black.

Pico Blanco, Costa Rica.

23. Hylodes gulosus.

Lithodytes gulosus, *Cope, l. c.* p. 112.

Very closely allied to *H. megacephalus*, from which it differs in the following points:—Head relatively smaller. No dermal plicæ. Dark leather-brown above; a black spot across the tympanum, and one under the eye; brown beneath, irregularly marbled with white. Size of *Leptodactylus pentadactylus*.

Pico Blanco, Costa Rica.

24. Hylodes diastema.

Lithodytes diastema, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 155.

Tongue obpyriform, rounded behind. Vomerine teeth in two very short transverse patches behind the choanæ. Snout depressed and narrowly truncate, with obtuse canthus rostralis; the diameter of the orbit equals the length of the snout; nostril subterminal; tympanum indistinct, with a diameter of less than half that of the eye-slit; eustachian tubes minute. First finger shorter than second; toes short; disks of fingers and toes large. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Above dark brown; darker brown between the eyes, which is bordered with paler anteriorly; below pale brown.

Panama.

25. Hylodes surdus. (Plate XIV. fig. 3.)

Tongue oval. Vomerine teeth in two small groups close together behind the choanæ. Snout rounded, as long as the orbital diameter, with distinct canthus rostralis; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; no tympanic disk; eustachian tubes minute. Fingers moderate, first shorter than second; toes moderate, quite free; disks well developed; subarticular tubercles moderate; two metatarsal tubercles, the outer rather indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth; belly slightly granular. Dark brown above; snout lighter; a dark streak from the tip of the snout through the eye to the shoulder; three dark streaks from the eye to the lip; three chevron-shaped markings on the back; limbs with dark, light-edged cross bars; hinder side of thighs black, white-spotted; throat and belly brown, marbled with darker; flanks and lower surface of hind limbs yellowish, marbled with dark brown. From snout to vent 37 millim.

Ecuador.

a. ♀.	W. Ecuador.	Mr. Fraser [C.].
b. ♀.	S. America.	

26. Hylodes glandulosus.

Hylodes glandulosus, *Bouleng. Bull. Soc. Zool. France,* 1880, p. 47.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two groups directed backwards, commencing from the inner hinder edge of the choanæ. Snout short, rounded, with distinct canthus rostralis; tympanum hardly one third the diameter of the eye. Toes quite free; disks of fingers and toes large. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the nostril. Skin of the head, back, and sides strongly tubercular; belly slightly granular. Blackish brown above: four or five whitish bars across the thighs; hinder side of thighs and lower surfaces blackish brown, spotted with white.

Ecuador.

27. Hylodes devillii.

Hylodes devillei, *Bouleng. Bull. Soc. Zool. France,* 1880, p. 47.

Tongue oval, entire. Vomerine teeth in two groups directed backwards, commencing from the inner hinder edge of the choanæ. Snout short, rounded, with distinct canthus rostralis; fronto-parietals concave, their edges elevated into two prominent ridges; tympanum distinct, one third the diameter of the eye. Toes with a slight rudiment of web; disks of fingers and toes large. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Upper surfaces distinctly tubercular; a glandular dorso-lateral fold; belly slightly granular. Dark brown above, light brown beneath, marbled with darker.

Ecuador.

28. Hylodes ricordii.

Hylodes ricordii, *Dum. & Bibr.* p. 623.
Euhyas ricordii, *Cope, Proc. Ac. Philad.* 1862, p. 154.
Lithodytes ricordii, *Cope, Check-list N.-Amer. Rept.* p. 31.

Tongue oblong, entire. Vomerine teeth in a zigzag series across the whole width of the palate, behind the choanæ. Snout subacuminate; nostril nearer the tip of the snout than the eye; tympanum two thirds the diameter of the eye. Fingers and toes slender; disks moderate, transversely oval; subarticular tubercles well-developed; two metatarsal tubercles. Hind limb one third longer than head and body. Head and body covered with small granuliform warts; a fold behind the tympanum; belly granular. Greyish or whitish fulvous above, with numerous blackish spots, often confluent on the head and back; limbs not cross-barred.

Cuba; Bahamas; Southern Florida.

29. Hylodes oxyrhynchus.

Hylodes oxyrhynchus, *Günth. Cat.* p. 92.
Hylodes oxyrhynchus, *Dum. & Bibr.* p. 622.
Euhyas oxyrhynchus, *Cope, Proc. Ac. Philad.* 1862, p. 154.

Tongue oblong, nicked behind. Vomerine teeth in a zigzag series across the whole width of the palate, behind the choanæ. Snout acuminate; nostril nearer the tip of the snout than the eye; tympanum three fourths the diameter of the eye. Fingers and toes fringed, dilated into small disks; subarticular tubercles well developed. The hind limb being carried forwards along the body, the foot extends beyond the tip of the snout. Skin smooth; belly granular. Fulvous above, clouded with reddish brown; limbs cross-barred.

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30. **Hylodes auriculatus.**

Hylodes ricordii, *Günth. Cat.* p. 92.
Hylodes auriculatus, *Cope, Proc. Ac. Philad.* 1862, p. 152.
—— antillensis, *Reinh. & Lütk. Vidensk. Meddel.* 1862, p. 209.

Tongue oval, slightly nicked behind. Vomerine teeth in two oblique, slightly arched series behind and between the choanæ. Snout rounded, as long as the orbital diameter; canthus rostralis angular; nostril much nearer the tip of the snout than the eye; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum distinct, half the diameter of the eye, close to it. Fingers moderate, first slightly shorter than second; toes short, first as long as second, free; disks large; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin with small glandules above, granular on the belly. Brown above, marbled with darker; a more or less distinct dark streak from the tip of the snout through the eye to the shoulder; limbs indistinctly cross-barred. Male with a subgular vocal sac.

West Indies.

a–c. ♂.	St. Domingo.	M. Sallé [C.]
d. ♀.	St. Domingo.	C. Taylor, Esq. [P.].

31. **Hylodes martinicensis.**

Hylodes martinicensis, *Günth. Cat.* p. 92.
Hylodes martinicensis, *Tschudi, Batr.* p. 77; *Dum. & Bibr.* p. 620, pl. 89. f. 2; *Steindachn. Novara, Amph.* p. 55; *Bavay, Ann. Sc. Nat.* (5) xvii. art. 16; *Peters, Mon. Berl. Ac.* 1876, p. 709, pl. i.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two small oblique series behind the choanæ. Snout obtuse, as long as the greatest orbital diameter; canthus rostralis angular; nostril much nearer the tip of the snout than the eye; interorbital space as broad as, or broader than, the upper eyelid; tympanum scarcely half the diameter of the eye. Fingers moderate, first as long as, or a little shorter than, the second; toes moderate, without distinct web; disks well developed; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or beyond. Upper surfaces smooth or with small glandules; belly granular; a ventral disk. Greyish or brownish above, with indistinct darker markings on the head and back, and cross bars on the hind limbs; a dark streak below the canthus rostralis and on the temporal region. Male with an internal vocal sac.

West Indies.

a. ♀.	St. Domingo.	
b–d. ♀ & hgr.	St. Domingo.	Sir A. Smith [P.].
e. Several spec.: ♂, ♀, & hgr.	St. Vincent.	
f. Hgr.	Barbadoes.	

32. **Hylodes varians.**

Hylodes varians, *Gundl. & Peters, Mon. Berl. Ac.* 1864, p. 390.

Tongue heart-shaped elongate, nicked behind. Vomerine teeth in two small oblique series behind the choanæ. Head broader than the body; snout flat, with distinct canthus rostralis; nostrils close to the tip of the snout; tympanum distinct, half the diameter of the eye. Disks of fingers and toes well developed; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, of belly granular. Brown or grey above, punctate or marbled with brown; a triangular brown spot between the eyes; hind limbs more or less distinctly cross-barred. Male with a subgular vocal sac.

Cuba.

33. **Hylodes bogotensis.**

Hylodes bogotensis, *Peters, Mon. Berl. Ac.* 1863, p. 407.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two short oblique series commencing near the inner hind edge of the choanæ. Snout rounded, as long as the orbital diameter; canthus rostralis rounded; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum distinct, one third the diameter of the eye. Fingers moderate, first shorter than second; toes moderate, with a slight rudiment of web; disks and subarticular tubercles well developed; two small metatarsal tubercles, the outer rather indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granular on the belly and under the thighs; no ventral disk. Uniform brown above. Male with a subgular vocal sac.

Colombia.

a–b. ♀ & hgr.	Sta. Fé de Bogotá.	Prof. Peters [P.].

34. **Hylodes bicumulus.**

Hylodes bicumulus, *Peters, Mon. Berl. Ac.* 1863, p. 410.

Tongue very large, indistinctly nicked behind. Vomerine teeth in two small round groups close together, behind the choanæ. Snout rounded, with distinct canthus rostralis; nostril much nearer the tip of the snout than the eye; the diameter of the latter equals its distance from the nostril; tympanum distinct, one third the diameter of the eye. First finger shorter than second; disks of fingers and toes very large, broader than long; subarticular tubercles well developed; two metatarsal tubercles, the outer very small; sometimes a small cutaneous spur on the tibio-tarsal articulation. The hind limb being carried forwards along the body, the tibio-tarsal articulation does not reach the tip of the snout. Skin smooth above; small scattered tubercles on the sides of the body and on the upper eyelids; a curved fold above the tympanum; belly granular. Flesh-coloured, reddish yellow above; sides of head and body grey, separated from the upper parts by a black streak; limbs cross-barred; hinder side of thighs dark brown; lower surfaces white, vermiculated with black.

Caracas.

35. Hylodes cerasinus.

Hylodes cerasinus, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 112, pl. 26. f. 4.

Tongue a narrow oval. Vomerine teeth in two well-separated fasciculi behind the choanæ. Snout narrowed towards the end, not produced, with distinct canthus rostralis; nostril nearer the tip of the snout than the eye; tympanum distinct, very small, one eighth the area of the eye. Digits long, free; disks truncate; first finger shorter than second. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth above; sides and belly granular. General colour brown above, white below; a rose-coloured vertebral band; upper lip crossed with pale lines; anterior half of sides finely reticulate with black, groin cherry-red; upper posterior face of femur and inner face of tibia cherry-red; lower posterior face of femur brown, punctate with white.

Pico Blanco, Costa Rica.

36. Hylodes cruentus.

Hylodes cruentus, *Peters, Mon. Berl. Ac.* 1873, p. 609; *Brocchi, Miss. Sc. Mex., Batr.* p. 54.

Tongue rounded behind. Vomerine teeth in two small, rounded, crooked groups behind the choanæ. Snout longer than the diameter of the eye, with distinct canthus rostralis; nostril close to the tip of the snout; tympanum distinct, vertically oval, hardly one third the size of the eye. First finger shorter than second; disks of fingers and toes much developed, truncate. Sides of body with small tubercles and longitudinal glandules; belly granular; no fold on the chest. Red above, with scattered black specks; a black streak below the canthus rostralis; front and hinder side of thighs brown; hind limbs indistinctly cross-barred; lower surfaces yellowish; a few small black spots on the lower belly.

Chiriqui.

37. Hylodes unistrigatus. (Plate XIV. fig. 4.)

Hylodes unistrigatus, *Günth. Proc. Zool. Soc.* 1859, p. 416.

Habit of *Hyla arborea*. Tongue oval, slightly nicked behind. Vomerine teeth in two small oblique groups behind the choanæ. Snout rounded, as long as the orbital diameter, with distinct canthus rostralis; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum distinct, not quite half the diameter of the eye. Fingers moderate, first shorter than second; toes short, free; disks large; subarticular tubercles well developed; two metatarsal tubercles, the outer sometimes indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum or the eye. Skin of upper surfaces smooth, of sides tubercular; belly granular; a strong fold across the chest. Brown or olive above, marbled or striped with darker; sometimes a light vertebral line. Male with a subgular vocal sac.

Ecuador; Bolivia.

a–b, c. ♂ ♀.	W. Ecuador.	Mr. Fraser [C.]. (Types.)
d. ♀.	Paitanga, Ecuador.	Mr. Buckley [C.].
e. Several spec.: ♂, ♀, & yg.	Bolivia.	

38. Hylodes buckleyi. (Plate XIV. fig. 5.)

Tongue oval, entire. Vomerine teeth in two oblique groups considerably behind the choanæ. Snout rounded, as long as the greatest orbital diameter; canthus rostralis distinct; nostril nearer the tip of the snout than the eye; fronto-parietals a little concave, their edges slightly prominent, their width almost twice that of the upper eyelid; tympanum distinct, a little more than one third the diameter of the eye. Fingers moderate, first shorter than second; toes moderate, quite free, slightly fringed; disks and subarticular tubercles moderate; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum or the eye. Skin of upper surfaces with small smooth warts; belly granular. Blackish brown above, uniform; in one specimen there are a lighter stripe across the interorbital space and two others, close together, along the back; throat and belly brown, marbled with darker, in one specimen yellowish dotted with brown; lumbar region and lower surface of limbs yellowish-and-brown marbled. From snout to vent 45 millim.

Ecuador.

a–e. ♀.	Intac.	Mr. Buckley [C.].

39. Hylodes whymperi.

Habit of *Hyla arborea*. Tongue oval, entire. Vomerine teeth in two oblique series behind the choanæ. Snout rounded, as long as the orbital diameter, with distinct canthus rostralis; nostril nearer the tip of the snout than the eye; interorbital space a little broader than the upper eyelid; tympanum hidden. Fingers moderate, first shorter than second; toes moderate, quite free; disks and subarticular tubercles moderate; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the angle of the mouth. Skin of upper surfaces tubercular; on the back the tubercles are confluent into more or less distinct longitudinal lines; belly granular. Dark olive-brown above, sometimes with a few light spots, greyish or reddish brown; immaculate, or marbled with dark brown, beneath; upper lip whitish; sometimes the front and hinder sides of the thighs tinged with magenta-red. Male with an internal subgular vocal sac. From snout to vent 27 millim.

Ecuador.

a–b. ♂ ♀.	Tortorillas, Chimborazo (13,200 feet).	Edward Whymper, Esq. [C.].
c. ♀.	Cotocachi (13,000 feet).	Edward Whymper, Esq. [C.].

40. Hylodes curtipes. (Plate XIV. fig. 6.)

Tongue oval, slightly nicked behind. Vomerine teeth in two oblique groups considerably behind the choanæ. Snout rounded, as long as the orbital diameter; canthus rostralis distinct; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid, with a median concavity formed by a fronto-parietal fontanelle; tympanum slightly distinct, about one third the diameter of the eye. Fingers moderate, first shorter than second; toes short, free, slightly fringed; disks of fingers and toes very small; subarticular tubercles moderate; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Skin of upper surfaces with small tubercles; back with more or less distinct glandular longitudinal folds; belly granular. Olive above, with indistinct darker markings, sometimes spotted with white, or with a brown vertebral band; a dark streak from the tip of the snout, through the eye to the shoulder; sides of body marbled with dark brown; beneath generally immaculate, whitish.

Ecuador.

a. Many spec., ♀.	Intac.	Mr. Buckley [C.].

I have hesitated to place this species in the genus *Hylodes*, the apical dilatation of the fingers and toes being very weak, and an extensive fontanelle being present. It bears, however, such analogy to *H. buckleyi* that I do not think it should be separated generically from it. *H. curtipes* is evidently a link towards the genus *Borborocœtes*.

41. Hylodes leptopus.

Hylodes leptopus, *Günth. Cat.* p. 93.
Batrachyla leptopus, *Bell, Zool. Beagle, Rept.* p. 43, pl. 18. f. 5; *Espada, Viaj. Pacif., Vertebr.* pl. 3. f. 6.
Hylodes leptopus, *Cunningham, Trans. Linn. Soc.* xxvii. p. 468.
Cystignathus macrodactylus, *Günth. Proc. Zool. Soc.* 1881, p. 18.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two small groups between the choanæ. Snout rounded, as long as the orbital diameter; canthus rostralis indistinct; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers long, first much shorter than second; toes moderate, with a slight rudiment of web; tips of fingers and toes dilated, truncate; the terminal phalanges bent down, as those of a man playing on the pianoforte; subarticular tubercles well developed; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin of upper surfaces with small smooth tubercles; belly granular. Olive above, marbled with blackish; a blackish triangular spot between the eyes, another from eye to lip; generally two large spots on each side of the body; limbs cross-barred. Male with a subgular vocal sac, and brown rugosities on the inner side of the first finger.

Chili; W. coast of Patagonia.

a. ♀.	Valdivia.	C. Darwin, Esq. [P.]. (Type.)
b. ♀.	Puerto Bueno, Magellan Straits.	Dr. Cunningham [P.].
c–e. ♂.	Puerto Bueno, Magellan Straits.	Dr. Coppinger [C.]. (Types of *Cystignathus macrodactylus.*)

42. Hylodes galdii.

Pristimantis galdi, *Espada, Jorn. Sc. Lisb.* iii. (1870) p. 61, *and Viaj. Pacif., Vertebr.* pl. 3 bis. f. 6.

Tongue oval. Vomerine teeth in two oblique, slightly arched series, beginning from the inner hinder edge of the choanæ. Snout subtriangular, truncate, with acute canthus rostralis; frontoparietals with prominent serrated edges; tympanic bones also forming a serrated crest; tympanum distinct. Fingers and toes free, long and slender, with well-developed disks. Hind limbs long. Skin minutely granular above; belly granular. Belly dark, white-spotted.

Ecuador.

43. Hylodes sulcatus.

Hylodes sulcatus, *Cope, Proc. Ac. Philad.* 1874, p. 126.

Tongue round, entire. Vomerine teeth in two short curved series entirely behind the choanæ, and not extending outwards beyond their middle. Head very wide; a strong ridge extends along the superciliary border to the posterior border of the cranium, enclosing a groove with its fellow; tympanum vertically oval, a little smaller than the eye. Fingers very short, without disks; toes with well-marked disks. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the nostril. Skin of upper surfaces rugose, with numerous short, generally symmetrical folds, two of which cross the suprascapular region, two on the sides, two on each side of the back, &c.; belly granular. Deep brown above, white below; a pale spot below the interval between orbit and tympanum; limbs cross-barred; femora pale, marbled behind.

Nauta, Upper Amazon.

44. Hylodes biporcatus.

Strabomantis biporcatus, *Peters, Mon. Berl. Ac.* 1863, p. 405; *Espada, An. Soc. Esp.* i. p. 85.
Limnophys napæus, *Espada, Jorn. Sc. Lisb.* iii. p. 60.

Tongue entire. Vomerine teeth in two arched series behind the choanæ. Head large, broad, with bony ridges; canthus rostralis distinct; nostril equally distant from the eye and the tip of the snout; eyes obliquely directed forwards; interorbital space deeply concave, the edges of the fronto-parietals being prominent, crest-like; tympanum very distinct, a little smaller than the eye. First finger longer than second; toes with a rudiment of web; tips of fingers, not of toes, slightly though distinctly dilated; subarticular tubercles very prominent; two metatarsal tubercles, the inner elongate, very prominent, the outer rounded and very small. The hind limb being carried forwards along the body, the foot extends beyond the tip of the snout. Skin smooth, minutely glandular; a few very small pointed warts on the upper eyelid; belly granular. Dark brown above, with a few black yellow-edged spots; beneath brown, dotted with yellow, or brown-and-white marbled.

Veragua; Ecuador.

45. Hylodes cornutus.

Limnophys cornutus, *Espada, Jorn. Sc. Lisb.* iii. p. 60.
Strabomantis cornutus, *Espada, An. Soc. Esp.* i. p. 85, *and Viaj. Pacif., Vertebr.* pl. 3. f. 4.

Tongue heart-shaped. Vomerine teeth in two arched series behind the choanæ. Head large, broad; canthus rostralis distinct; interorbital space deeply concave, the edges of the fronto-parietals being prominent, crest-like; tympanum distinct, large. First finger longer than second; toes free; tips of fingers very slightly, of toes more distinctly dilated. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Upper surfaces warty, the warts conical, spine-like on the limbs; upper eyelid with a horn-like dermal appendage; a)-(-shaped glandular fold on the nape; one or two pairs of slightly curved folds on the middle of the back; beneath granular.

Ecuador; Colombia.

a. Yg. Bogotá.

10. CERATOPHRYS.

Ceratophrys, (*Boie*) *Wied, Beitr.* p. 569; *Wagler, Syst. Amph.* p. 203; *Tschudi, Batr.* p. 81; *Dum. & Bibr.* viii. p. 428; *Günth. Cat.* p. 24; *Cope, Nat. Hist. Rev.* 1865, p. 112, *and Journ. Ac. Philad.* (2) vi. 1866, p. 93.
Phrynoceros, *Tschudi, l. c.*
Stombus, *Gravenh. Isis,* 1825, p. 952; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 94.
Pyxicephalus, sp., *Dum. & Bibr.* viii. p. 442.
Trigonophrys, *Hallow. Proc. Ac. Philad.* 1856, p. 298.
Pyxicephalus, *Günth. Cat.* p. 24.
Odontophrynus, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 159.
Tomopterna, *Cope, Nat. Hist. Rev.* 1865, p. 112, *and Journ. Ac. Philad.* (2) vi. 1866, p. 93.

Pupil horizontal. Tongue heart-shaped, free behind. Vomerine teeth. Tympanum more or less distinct, or hidden. Fingers free; toes more or less webbed, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate, which ossifies in the fully adult state. Terminal phalanges simple.

South America.

The development of the upper eyelid into a horn-like dermal appendage has been considered one of the chief characters of the genus *Ceratophrys.* But in *C. ornata* it is so little marked that it evidently should be used merely as a specific character. The species hitherto separated as *Odontophrynus* (Reinh. & Lütk.) or *Pyxicephalus* (Günth. nec Tschudi) are therefore united with *Ceratophrys,* the whole forming a very natural genus.

Synopsis of the Species.

I. Upper eyelid with several pointed papillæ.

A paratoid-like swelling of the skull above and somewhat behind the eye. 1. *bigibbosa*, p. 222.

II. Upper eyelid produced into a horn-like appendage.

A. No dorsal shield.

Sides of head and body with triangular skinny appendages; metatarsal tubercle reaching beyond the eye	2. *appendiculata*, p. 222.
Metatarsal tubercle not reaching beyond the eye; interorbital space concave; a very distinct ridge between the eyes .	3. *boiei*, p. 223.
Interorbital space deeply concave	4. *fryi*, p. 223.
Head very much elevated; tympanum visible	5. *cornuta*, p. 224.

B. A bony dorsal shield.

Head with symmetrical ridges........	6. *dorsata*, p. 225.

III. Upper eyelid slightly pointed, triangular.

A bony dorsal shield................	7. *ornata*, p. 225.

IV. Upper eyelid simple.

No large gland on the calf	8. *americana*, p. 226.
A large paratoid-like gland on the calf.	9. *cultripes*, p. 226.
The tip of the fourth toe does not reach beyond the eye	10. *leyboldii*, p. 227.

1. Ceratophrys bigibbosa.

Ceratophrys boiei, *Hensel, Arch. f. Naturg.* 1867, p. 121.
—— bigibbosa, *Peters, Mon. Berl. Ac.* 1872, p. 204.

Resembles *C. boiei*, but differs by remarkable characters. The upper eyelid is not produced into a horn, but bears several pointed papillæ, as in *Asterrophrys turpicola*. There is a round swelling of the skull, resembling a paratoid, above and somewhat behind the eye. No dermal ridge on the back. This species is founded on a young specimen (36 millim.).

Rio Grande do Sul, Brazil.

2. Ceratophrys appendiculata. (Plate XV. fig. 1.)

Ceratophrys appendiculata, *Günth. Ann. & Mag. N. H.* (4) xi. p. 418.
—— cafferi, *Camerino, Att. Ac. Torin.* xiv. p. 880.

Vomerine teeth in two small groups between the choanæ. Head large, depressed; nostril nearer the eye than the tip of the snout; snout terminating in a short triangular flap; upper eyelid produced in a horn-like appendage, the length of which is more than the greatest orbital diameter; interorbital space concave; tympanum hidden. First and second fingers equal; toes webbed at the base; subarticular tubercles well developed; inner metatarsal tubercle oval, blunt; no tarsal fold. The hind limb being carried forwards along the body, the metatarsal tubercle reaches beyond the eye. Skin minutely granular above and beneath; sides of head and body and upper surface of limbs with triangular skinny appendages. A very prominent dermal ridge unites the horns across the interorbital space: two others begin on the upper eyelid, approach each other on the middle of the back, diverge again, and finally unite into a point above the vent. Greyish above, with symmetrical brown markings; limbs cross-barred; throat brown. Male with a subgular vocal sac.

Brazil.

a. ♂.	Brazil.	(Type.)

3. Ceratophrys boiei.

Ceratophrys boiei, *Günth. Cat.* p. 25.
Ceratophrys boiei, *Wied, Beitr.* i. p. 592, *and Abbild.*; *Dum. & Bibr.* p. 437; *Steindachn. Novara, Amph.* p. 28.
Stombus cornutus, *Gravenh. Isis,* 1825, p. 952.
—— boiei, *Gravenh. Delic.* p. 50, pl. 9. f. 1 & 2.
Ceratophrys granosa, *Cuv. R. A.*; *Guérin, Iconogr. Rept.* pl. 26. f. 2.

Vomerine teeth in two small groups between the choanæ. Head large, not bony; nostril equally distant from the eye and the tip of the snout, or a little nearer the former; upper eyelid produced into a horn-like appendage, the length of which equals at least three fourths of the diameter of the eye; interorbital space concave; tympanum hidden. First finger scarcely longer than second; toes webbed at the base; subarticular tubercles much developed; inner metatarsal tubercle oval, blunt; no tarsal fold. The hind limb being carried forwards along the body, the metatarsal tubercle reaches the eye. Skin granular above and beneath; the sides and upper surface of the limbs intermixed with large conical tubercles; a dermal ridge, formed of large granules, unites the tips of the horns across the interorbital space; two others begin on the upper eyelids, approach on the middle of the back, diverge again, and finally unite in a point above the vent. Brownish above; a large spot below the eye, a festooned band bordering the dorsal ridges, and cross bars on the limbs dark brown; a spot on each side of the snout, and the middle of the back between the ridges, sometimes whitish.

Brazil.

a–b. ♀.	Bahia.	
c. Hgr.	Bahia.	Dr. Wucherer [C.].
d, e–f, g, h. ♀ & hgr.	S. America.	

4. Ceratophrys fryi. (Plate XV. fig. 2.)

Ceratophrys fryi, *Günth. Ann. & Mag. N. H.* (4) xi. p. 417.

Vomerine teeth in a straight, slightly interrupted series between the choanæ. Head large; nostril a little nearer the eye than the tip of the snout; upper eyelid produced into a horn-like appendage, the length of which equals the diameter of the eye; interorbital space deeply concave; tympanum hidden. First finger considerably longer than second; toes webbed at the base; subarticular tubercles much developed; inner metatarsal tubercle oval, blunt. The hind limb being carried forwards along the body, the metatarsal tubercle reaches the eye. Skin granular above and beneath, the granules of unequal size; the two dorsal lines of tubercles, which are so conspicuous in *C. boiei*, are absent on the anterior and middle portions of the back, but represented by two short series commencing in the sacral region and converging into a point above the vent. Brown above, indistinctly marbled with darker; the snout white.

Brazil.

a. ♀.	Serra de Mantiqueira, Minas Geraes.	A. Fry, Esq. [P.].	(Type.)

5. Ceratophrys cornuta.

Ceratophrys megastoma, *Günth. Cat.* p. 25.
Seba, i. p. 115, t. 72. f. 1 & 2.
Rana cornuta, *Linn. Mus. Ad. Frid.* p. 48, *and Syst. Nat.* i. p. 356; *Schneider, Hist. Amph.* p. 125; *Shaw, Nat. Misc.* iii. pl. 76.
Bufo cornutus, *Daud. Rain.* p. 102, pl. 38, *and Rept.* viii. p. 214; *Latr. Rept.* ii. p. 117, f. 1.
Rana megastoma, *Spix, Test. Ran.* p. 27, pl. 4. f. 1.
Ceratophrys dorsata, part., *Wagl. Syst. Amph.* p. 204.
—— cornuta, *Schleg. Abbild.* t. 10. f. 1 & 2; *Peters, Mon. Berl Ac.* 1872, p. 204.
Phrynoceros vaillantii, *Tschudi, Batr.* p. 82.
Ceratophrys daudini, *Cuv. R. A.*; *Dum. & Bibr.* p. 440.
—— megastoma, *Espada, Viaj. Pacif., Vertebr.* p. 26.

Vomerine teeth in two small groups between the choanæ (absent in spec. *a*). Head enormous, very much elevated, bony; a broad ridge from the eye to above the tympanum; nostril nearer the eye than the tip of the snout; eye very small; the upper eyelid produced in a horn-like appendage, the length of which equals the diameter of the eye; interorbital space concave; tympanum moderately distinct. First finger longer than the second; toes two-thirds webbed, the web as if mutilated; subarticular tubercles not very prominent; inner metatarsal tubercle oval, blunt; a very distinct tarsal fold. The hind limb being carried forwards along the body, the metatarsal tubercle reaches between the eye and the nostril. Upper surfaces with small tubercles, larger and conical on the flanks; beneath granular. Greyish above, the median part of the back lighter; head with symmetrical markings; back with angular dark-brown spots; sides marbled with dark brown; limbs with regular dark cross bars. Male with a subgular vocal sac, and the throat black.

Surinam, N. Brazil.

a. ♂.	Surinam.	
b. Yg.	Santarem.	Mr. Wickham [C.].

6. Ceratophrys dorsata.

Ceratophrys cornuta, *Günth. Cat.* p. 24.
Rana cornuta, *Tilesius, Magaz. Naturf. Fr. Berl.* iii. p. 90, pl. 3, *and Krusenstern's Reise*, pl. 6.
Ceratophrys dorsata, *Wied, Beitr. Naturg. Bras.* i. p. 576, *and Abbild.*; *Wagl. Icon.* t. 22. f. 1 & 2, *and Syst. Amph.* p. 204; *Tschudi, Batr.* p. 81; *Dum. & Bibr.* p. 431; *Peters, Mon. Berl. Ac.* 1872, p. 204.
Stombus dorsatus, *Gravenh. Delic.* p. 49.

Two very small groups of vomerine teeth between the choanæ. Head enormous, bony, with symmetrical ridges and patches of tubercles; nostril nearer the eye than the tip of the snout; eye small; upper eyelid produced into a horn-like appendage, the length of which does not equal the width of the orbit; interorbital space concave; tympanum moderately distinct. Back with a club-shaped bony shield. First finger longer than second; toes slightly webbed; subarticular tubercles not very prominent; inner metatarsal tubercle large, oval, compressed, with blunt edge; a rather indistinct tarsal fold. The hind limb being carried forwards along the body, the metatarsal tubercle reaches between the eye and the nostril. Skin of upper surfaces with small tubercles; a cutaneous ridge on each side of the dorsal shield; smooth or slightly granular beneath. Brown above, the middle of the head and back, the club-shaped figure, a stripe on the scapular region, and cross bands on the legs bluish. Male with a subgular vocal sac.

Brazil.

a–b. ♂ ♀.	Brazil.	(The male contained in its stomach a full-grown *Leptodactylus ocellatus.*)
c. ♀.	Brazil.	
d. Adult, stuffed.	S. America.	Lieut. Maud, R.N. [P.].

7. Ceratophrys ornata.

Ceratophrys ornata, *Günth. Cat.* p. 25.
Uperodon ornatum, *Bell, Zool. Beagle, Rept.* p. 50, pl. 20. f. 2.
Trigonophrys rugiceps, *Hallow. Proc. Ac. Philad.* 1856, p. 298, *and Journ. Ac. Philad.* 1858, pl. 36.
Ceratophrys ornata, *Günth. Trans. Zool. Soc.* xi. p. 220, pl. 45.

Vomerine teeth in two small groups between the choanæ. Palatine ridges more or less distinctly denticulated. Head large, bony, rough; nostril nearer the eye than the tip of the snout; upper eyelid slightly pointed, triangular; interorbital space slightly concave, broader than the upper eyelid; tympanum slightly distinct. A bony dorsal shield. Fingers very short, first longer than second; toes very short, half webbed; subarticular tubercles not much developed; inner metatarsal tubercle very large, shovel-shaped, black-edged; a slight tarsal fold. The hind limb being carried forwards along the body, the metatarsal tubercle does not reach the eye. Skin tubercular above, granular beneath. Yellowish or greenish above, with large insuliform, light-edged olive spots; sometimes vinaceous red lines between the spots. Male with a subgular vocal sac.

E. S. America.

a–b. ♂ ♀.	Buenos Ayres.	Ch. Darwin, Esq. [P.]. (Types.)
c. ♀.	Buenos Ayres.	E. W. White, Esq. [P.].
d. ♀.	Parana.	

8. Ceratophrys americana.

Pyxicephalus americanus, part., *Günth. Cat.* p. 24.
Pyxicephalus americanus, *Dum. & Bibr.* p. 446; *Bell, Zool. Beagle, Rept.* p. 40, pl. 18. f. 2; *D'Orbigny, Amér. mérid.* v. p. 10, pl. 14. f. 1–4; *Espada, Viaj. Pacif., Vertebr.* p. 20.

Vomerine teeth in two straight groups a little behind the choanæ. Head moderate, not bony; nostril equally distant from the eye and the tip of the snout; eyelid normal; interorbital space flat, narrower than the upper eyelid; tympanum hidden. First finger longer than second; toes one-third webbed; subarticular tubercles well developed; inner metatarsal tubercle very large, shovel-shaped, black-edged; a short tarsal fold. The hind limb being carried forwards along the body, the metatarsal tubercle does not reach the eye. Skin tuberclar above and beneath; a few elongated glands on the back. Olive above, with large, insuliform, light-edged spots; a light vertebral stripe.

E. S. America.

a. ♀.	Montevideo.	
b. Yg.	Montevideo.	Charles Darwin, Esq. [P.].
c–d. ♂ ♀.	Buenos Ayres.	E. W. White, Esq. [C.].

9. Ceratophrys cultripes.

Pyxicephalus americanus, part., *Günth. Cat.* p. 24.
Odontophrynus cultripes, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 159, pl. iii. f. 1.
Pyxicephalus cultripes, *Cope, Proc. Ac. Philad.* 1863, p. 51.

Vomerine teeth in two slightly oblique series between the choanæ. Head moderate, not bony; nostril a little nearer the eye than the tip of the snout; upper eyelid simple; interorbital space scarcely concave, a little narrower than the upper eyelid; tympanum hidden. First finger longer than second; toes one-third webbed; subarticular tubercles well developed; inner metatarsal tubercle very large, shovel-shaped, brown-edged; a very distinct tarsal fold. The hind limb being carried forwards along the body, the metatarsal tubercle does not reach the eye. Skin tubercular above and beneath; two or three parotoid-like glands on each side of the neck and front part of the back; a large parotoid-like gland on the calf. Brown or olive above, marbled with darker; sometimes a rather indistinct light median line on the hinder half of the body.

E. S. America.

a–b. ♀.	Brazil.	
c. ♀.	Tropical America.	Sir A. Smith [P.].

10. Ceratophrys leyboldii.

Pyxicephalus leyboldi, *Espada, Viaj. Pacif., Vertebr.* p. 15.

Differs from *C. americana* by its shorter limbs. The hind limb being carried forwards along the body, the tip of the fourth toe reaches the anterior corner of the eye.

N. Chili.

11. EDALORHINA.

Edalorhina, *Espada, Jorn. Sc. Lisb.* 1870, p. 58.
Bubonias, *Cope, Proc. Ac. Philad.* 1874, p. 124.

Pupil horizontal. Tongue oval, notched and free behind. Vomerine teeth present or absent. Tympanum very distinct. Fingers free; toes free or nearly so, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum with a bony style. Sacral diapophysis slightly dilated. Terminal phalanges simple.

W. S. America.

Synopsis of the Species.

A dermal ridge across the interocular space; toes webbed at the base	1. *perezii*, p. 227.
No dermal ridge across the interocular space; toes webbed at the base	2. *buckleyi*, p. 228.
No dermal ridge across the interocular space; toes quite free.........................	3. *plicifrons*, p. 228.

1. Edalorhina perezii. (Plate XVI. fig. 2, upper view of head.)

Edalorhina perezi, *Espada, l. c. and Viaj. Pacif., Vertebr.* p. 105, pl. 1. f. 5.

Vomerine teeth in two oblique series commencing from the inner hind edge of the choanæ. Snout angular, with well-marked canthus rostralis; nostril much nearer the tip of the snout than the eye; interorbital space narrower than the upper eyelid; tympanum oval, its long axis directed upwards and forwards, as large as the eye. First finger not extending beyond second; toes with a rudiment of web; subarticular tubercles well developed; two small metatarsal, and three or four conical tarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or nearly so far. Skin nearly smooth; a strong fold from the eye to the groin; below this fold, on the scapular region, a large parotoid gland; another similar gland on the loin; a more or less distinct fold along the vertebral line; a few conical tubercles on the snout; edge of the upper eyelid with three or four horn-like dermal processes; a strong, bow-shaped, raised fold from one eyelid to the other; generally four round tubercles on the back, and one on each thigh; a raised fold across the middle of the calf. Olive above, marbled with darker; loreal regions obliquely striped; sides deep black, the colour extending on the sides of the belly and then passing round in front of the thighs; lumbar gland yellow and black; limbs cross-barred above, black and yellow beneath. Male with a subgular vocal sac and brown rugosities on the inner side of the first finger.

Ecuador.

a–c. ♀.	Canelos.	Mr. Buckley [C.].
d. ♂.	Sarayacu.	Mr. Buckley [C.].
e. ♀.	Ecuador.	Mr. Buckley [C.].
f. ♀.	Puerto del Mairo.	Mr. H. Veitch [P.].

2. **Edalorhina buckleyi.** (Plate XVI. fig. 1.)

No fold between the eyelids; a fold from the middle of each eyelid to the sacral region; a fold from the tip of the snout to the occiput; an elongated tubercle on the middle of the back. Back longitudinally striped with brown. Otherwise as in *E. perezii*.

Ecuador.

a. ♂.	Canelos.	Mr. Buckley [C.].

3. **Edalorhina plicifrons.**

Bubonias plicifrons, *Cope, Proc. Ac. Philad.* 1874, p. 124.

Vomerine teeth none. Tympanum oval, its long axis directed upwards and forwards, and nearly equal in length to that of the eye. Toes free. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. Skin everywhere smooth except in the following regions of the upper surface:—a strong elevated fold from the superciliary border to the inguinal gland, below which on the scapular region is a boss like a parotoid gland; a fold from the inner border of the eyelid to the end of the sacral diapophysis; a fold from the end of the snout to the end of the coccyx on the median line; a short conic tubercle stands at its extremity on the snout; edge of the eyebrow with three dermal processes or "horns." Brown above, pure white below; sides pure black, the colour extending on the sides of the abdomen and then passing round in front of the femora, thus enclosing an anchor-shaped space of white; a black spot on the posterior part of the inguinal glands; limbs black and white beneath.

Nauta, Upper Amazon.

12. PALUDICOLA.

Paludicola, *Wagl. Syst. Amph.* p. 206.
Pleurodema, *Tschudi, Batr.* p. 84; *Cope, Nat. Hist. Rev.* 1865, p. 113, *and Journ. Ac. Philad.* (2) vi. p. 95.
Cystignathus, sp., *Dum. & Bibr.* viii. p. 407.
Leiuperus, *Dum. & Bibr.* viii. p. 420; *Günth. Cat.* p. 22; *Cope, Nat. Hist. Rev.* p. 113, *and Journ. Ac. Philad.* p. 95.
Pleurodema, sp., *Günth. Cat.* p. 31.
Gomphobates, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 172; *Cope, Nat. Hist. Rev.* p. 113, *and Journ. Ac. Philad.* p. 96.
Eupemphix, *Steindachn. Sitz. Ak. Wien*, xlviii. 1863, p. 189, *and Verh. zool.-bot. Ges. Wien*, 1864, p. 271.
Lystris, *Cope, Proc. Ac. Philad.* 1868, p. 312.

Pupil horizontal. Tongue subcircular, oval or elliptic, entire or indistinctly nicked, and free behind. Vomerine teeth present or absent; if present, between the choanæ. Tympanum indistinct or hidden. Fingers free; toes free or incompletely webbed, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum with a bony style. Terminal phalanges simple.

Tropical America.

Synopsis of the Species.

I. A well-developed lumbar gland; no tarsal tubercle.

Toes nearly half webbed; lumbar gland at least as long as the head	1. *bufonia*, p. 230.
Toes nearly quite free; first finger not extending beyond second	2. *bibronii*, p. 231.
Toes nearly quite free; first finger extending a good deal beyond second ..	3. *brachyops*, p. 232.
Tibio-tarsal articulation reaching the eye	4. *cinerea*, p. 232.
II. A well-developed lumbar gland; a tarsal tubercle	5. *fuscomaculata*, p. 233.

III. Lumbar gland none or indistinct; a tarsal tubercle.

A. Back without longitudinal folds.

Tongue heart-shaped; vomerine teeth ..	6. *diplolistris*, p. 233.
Head small; a dark lateral stripe......	7. *biligonigera*, p. 234.
Head moderate; back with large insuliform spots	8. *albifrons*, p. 234.

B. Back with longitudinal folds.

The distance between the tarsal and inner metatarsal tubercles is more than that between the two metatarsal tubercles	9. *kröyeri*, p. 235.
The distance between the tarsal and inner metatarsal tubercles is less than that between the two metatarsal tubercles	10. *henselii*, p. 235.

IV. No lumbar gland; no tarsal tubercle.

A. Skin of the back with large flat warts.

Interorbital space as broad as the upper eyelid; toes united at the base by a slight web .... 11. *marmorata*, p. 235.
Interorbital space as broad as the upper eyelid; no trace of membrane between the toes .... 12. *verrucosa*, p. 236.
Interorbital space very narrow .... 13. *sagittifera*, p. 236.

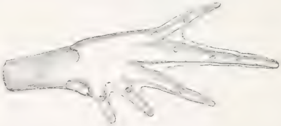
B. Two glandular lines forming an X-shaped figure on the back...... 14. *falcipes*, p. 236.

C. Skin smooth, or with a few very small granules on the back.

Habit slender...................... 15. *nitida*, p. 237.
Habit stout .. .. 16. *mexicana*, p. 237.

1. Paludicola bufonia.

Leiuperus salarius, *Günth. Cat.* p. 22.
Pleurodema bufonium, *Günth. l. c.* p. 31.
Pleurodema bufonium, *Bell, Zool. Beagle, Rept.* p. 39, pl. 17. f. 5.
Leiuperus salarius, *Bell, l. c* p. 39, pl. 18. f. 1.



Lower surface of foot.

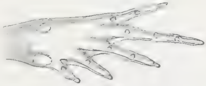
Tongue subcircular, indistinctly nicked behind. Vomerine teeth in two small oblique groups between the choanæ. Snout rounded, as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum indistinct. Fingers short, depressed, first extending slightly beyond second; toes short, nearly half webbed, the membrane extending as a fringe to their tips; subarticular tubercles small; two strong, oval, compressed, metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. Skin with very small warts above; a very large lumbar gland, at least as long as the head, depressed, elliptical; another subcircular gland on the shoulder. Olive above, with small darker spots; lumbar glands of the colour of the back, with large irregular brown spots; limbs cross-barred; sometimes a light vertebral stripe.

Patagonia.

a, b. ♀.	Port Desire.	C. Darwin, Esq. [P.].	(Types.)
c. Yg.	Port Desire.	C. Darwin, Esq. [P.].	(Type of *Leiuperus salarius.*)

2. Paludicola bibronii.

Pleurodema bibroni, vars. A & C, *Günth. Cat.* p. 31.
Pleurodema bibroni, *Tschudi, Batr.* p. 85; *Girard, U.S. Expl. Exped., Herp.* p. 38, pl. 4. f. 33–38; *Espada, Viaj. Pacif., Vert.* p. 87.
Cystignathus bibroni, *Dum. & Bibr.* p. 410, pl. 87. f. 2; *Guichen. in Gay, Chile, Rept.* p. 96, pl. 7. f. 1.
Pleurodema darwinii, *Bell, Zool. Beagle, Rept.* p. 36, pl. 17. f. 3; *Hensel, Arch. f. Naturg.* 1867, p. 133.
—— elegans, *Bell, l. c.* p. 37, pl. 17. f. 4; *Girard, l. c.* p. 40, pl. 4. f. 28–32.
Cystignathus elegans, *Guichen. l. c.* p. 101.



Lower surface of foot.

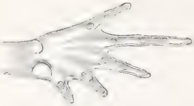
Tongue subcircular, entire or indistinctly nicked behind. Vomerine teeth in two small oblique groups between the choanæ. Snout rounded, slightly longer than the greatest orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space generally narrower than the upper eyelid; tympanum indistinct or quite hidden. Fingers moderate, first not extending beyond second; toes moderate, with a rudimentary web extending as a fringe along their sides; subarticular tubercles moderate; a small oval inner, and a small rounded, sometimes oval, outer metatarsal tubercle, both very distinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the tympanum. Skin smooth, or with small warts above; a very prominent oval lumbar gland, generally larger than the eyeball. Greyish or olive above, marbled with brown; lumbar gland black and white; sometimes a light vertebral stripe; anterior half of the male's throat black. Male with a subgular vocal sac.

S. America.

a. ♀.	Maldonado.	C. Darwin, Esq. [P.]. (Type of *P. darwinii.*)
b. Several spec.: ♀, hgr., & yg.	Talcahuano.	Dr. Cunningham [C.].
c–d, e, f, g, h–i. ♀ & hgr.	Chili.	
k. ♀.	Chiloe.	C. Darwin, Esq. [P.]. (Type of *C. elegans.*)
l. ♀.	Chiloe.	
m. ♀.	Shores of the Pacific Ocean.	
n, o–q, r–s. ♂, ♀, & hgr.	S. America.	C. Darwin, Esq. [P.].

3. Paludicola brachyops.

Pleurodema bibroni, var. B, *Günth. Cat.* p. 32.
Pleurodema elegans, (*non Bell*) *Steindachn. Sitz. Wien. Ac.* xlviii. pl. 1. f. 1–5, *and Novara, Amph.* p. 14.
Lystris brachyops, *Cope, Proc. Ac. Philad.* 1868, p. 312.
Pleurodema sachsi, *Peters, Mon. Berl. Ac.* 1877, p. 460.



Lower surface of foot.

Tongue subcircular, indistinctly nicked behind. Vomerine teeth in two small oblique groups between the choanæ. Snout rounded, as long as the orbital diameter; nostril a little nearer the tip of the snout than the eye; interorbital space narrower than the upper eyelid; tympanum indistinct. Fingers moderate, first extending a good deal beyond second; toes short, with a rudimentary web extending as a slight fringe along their sides; subarticular tubercles moderate; two strong, oval, shovel-shaped metatarsal tubercles, the outer a little longer than the inner. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Skin of upper surfaces with a few small flat warts; a very prominent oval lumbar gland, as large as the eyeball. Olive-brown, with a few indistinct darker markings; a large black spot on the inguinal region, including the gland which bears a few small white specks; loins and hinder side of thighs rose-coloured, immaculate; upper side of thighs with three large black spots; the male's throat grey. Male with a subgular vocal sac.

Colombia; Venezuela; N. Brazil.

a, b. ♂ & yg.	Venezuela.	Mr. Dyson.

4. Paludicola cinerea.

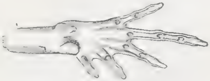
Pleurodema cinereum, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 40.

Tongue a wide oval, with a slit-like notch behind. Vomerine teeth in small fasciculi between the choanæ. Snout oval, vertically truncate; nares terminal; membranum tympani distinct, its diameter one third that of the eye. Two metatarsal tubercles, the outer not prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the middle of orbit. Skin with low warts on all the upper surfaces of the head and body; a moderate, oval inguinal gland. Colour above grey leaden, with indistinct darker plumbeous spots, of which the largest is between the orbits; a black crescent on the inguinal gland; limbs dark cross-banded; hinder side of thighs darkly grey-spotted; lower surfaces dirty white; gular region grey dusted.

Juliaca, Peru (12,550 feet).

5. **Paludicola fuscomaculata.**

Eupemphix fuscomaculatus, *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 272, pl. 13. f. 3.
Gomphobates fuscomaculatus, *Steindachn. Novara, Amph.* p. 12.
Lystris fuscomaculatus, *Cope, Proc. Ac. Philad.* 1868, p. 312.
Pleurodema granulosum, *Espada, Viaj. Pacif., Vert.* p. 95, pl. 1. f. 6.



Lower surface of foot.

Tongue elliptic. Vomerine teeth none. Snout rounded, as long as the orbital diameter; interorbital space slightly broader than the upper eyelid; tympanum hidden. Fingers moderate, first not extending beyond second; toes moderate, free; subarticular tubercles well developed; a small conical tubercle on the inner side of the tarsus, not far removed from the metatarsal tubercles; latter two, large, oval, compressed, sharp-edged. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the eye. Back with longitudinal flat glands; a flat round lumbar gland, somewhat larger than the eye. Greyish or olive above, marbled with darker, and with large, confluent, white-edged spots; limbs cross-barred; lumbar gland black, white-margined in front. Male with a singular vocal sac.

Brazil; Uruguay; Buenos Ayres.

a. ♂.	Oran Salta, Buenos Ayres.	E. W. White, Esq. [C.].
b. ♀, bad state.	Rio de Cordova, Argentine Republic.	E. Fielding, Esq. [P.].

[*Eupemphix nattereri*, Steindachn. Sitz. Wien. Ak. xlviii. p. 189, pl. 1. f. 6–9, appears to agree in every respect with this species, except in the absence of a tarsal tubercle.—Cuyaba, Brazil.]

6. **Paludicola diplolistris.**

Cystignathus diplolistris, *Peters, Mon. Berl. Ac.* 1870, p. 648, pl. 2. f. 2.

Habit and coloration as in *P. bibronii*, but without lumbar gland, with shorter fingers and toes, the two metatarsal tubercles larger and shovel-shaped, and a tubercle under the tarsus. Tongue heart-shaped. Vomerine teeth in two oblique series. Tympanum distinct, about one third the orbital diameter.

Ceára, Brazil.

7. Paludicola biligonigera.

Liuperus biligonigerus, *Cope, Proc. Ac. Philad.* 1860, p. 517.
Gomphobates notatus, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 173, pl. 4. f. 3; *Hensel, Arch. f. Naturg.* 1867, p. 138; *Steindachn. Novara, Amph.* p. 11.
Pleurodema biligonigera, *Cope, Proc. Ac. Philad.* 1862, p. 352.
Leiuperus albonotatus, *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 272, pl. 13. f. 3, & p. 551.
Gomphobates biligonigerus, *Cope, Proc. Amer. Philos. Soc.* xi. p. 168.
Paludicola notata, *Peters, Mon. Berl. Ac.* 1872, p. 223.

Tongue small, elliptic, entire. Vomerine teeth none. Head small; snout short, rounded; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum hidden. Fingers moderate, first not extending beyond second; toes moderate, with a slight rudiment of web; subarticular tubercles well developed; tarsus furnished with a minute, acute tubercle near the middle of its posterior face; two compressed, oval metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the eye. Skin smooth, or with small warts above. Above olive, marbled with darker; a dark lateral stripe; a black inguinal spot. Male with a black throat and two external vocal sacs; during the breeding-season the inner side of the first digit is furnished with brown rugosities.

Brazil.

a. ♂.	Lagoa Santa.	Prof. Reinhardt [P.].
b–c. Hgr.	Bahia.	
d. ♀.	Para.	R. Graham, Esq. [P.].

8. Paludicola albifrons.

Bufo albifrons, *Spix, Test. Ran. Bras.* p. 48, pl. 19. f. 2; *Peters, Mon. Berl. Ac.* 1872, p. 222.
Paludicola albifrons, *Wagl. Syst. Amph.* p. 206.
Gomphobates marmoratus, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 175, pl. 4. f. 4; *Hensel, Arch. f. Naturg.* 1867, p. 137; *Steindachn. Novara, Amph.* p. 12.
Leiuperus marmoratus, *Burmeister, Reise La Plata*, ii. p. 532.
Eupemphix nattereri, part., *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 271.

Tongue elliptic. Vomerine teeth none. Snout rounded, as long as the orbital diameter; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum hidden. Fingers moderate, first not extending quite as far as second; toes rather short; subarticular tubercles well developed; a small conical tubercle on the inner side of the tarsus; two oval, compressed, metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation does not reach the eye. Skin nearly smooth above. Above with numerous insuliform dark-edged spots, arranged in cross bars upon the limbs. Male with two external subgular vocal sacs.

Brazil.

9. Paludicola kröyeri.

Gomphobates kröyeri, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 176; *Steindachn. Novara, Amph.* p. 11.

Leiuperus ephippifer, *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 277, pls. 14. f. 1, & 16. f. 5.

Tongue elliptic. Vomerine teeth none. Head rather small; snout rounded, as long as the orbital diameter; nostril nearer the tip of the snout than the eye; interorbital space not quite so broad as the upper eyelid; tympanum indistinct. Fingers moderate, first not extending quite as far as second; toes moderate, with slight rudiment of web; subarticular tubercles well developed; a small conical tubercle on the middle of the inner side of the tarsus; two oval, compressed metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the eye. Back with longitudinal, undulated, glandular folds; skin smooth beneath. Olive or brownish above; a broad dark stripe from the eye to the groin; upper lip with vertical bars; back more or less distinctly striped; a more or less distinct blackish inguinal spot; hind limbs cross-barred. Male with a blackish throat and two external vocal sacs; the inner side of the first digit furnished with brown rugosities during the breeding-season.

S. America.

a–b. ♂.	Brazil.	Prof. Reinhardt [P.].
c. ♀.	S. America.	Charles Darwin, Esq. [P.].

10. Paludicola henselii.

Gomphobates kröyeri, *Hensel, Arch. f. Naturg.* 1867, p. 139.

Paludicola henselii, *Peters, Mon. Berl. Ac.* 1872, p. 223.

Closely allied to *P. kröyeri*, from which it differs in the following characters:—The distance between the tarsal and the inner metatarsal tubercles is less than that between the two metatarsal tubercles. Dorsal folds nearly straight. Sides of the snout with a white line between two blackish ones, as in *Leptodactylus mystacinus*.

Rio Grande, Brazil.

11. Paludicola marmorata.

Leiuperus marmoratus, *Günth. Cat.* pp. 22 & 135.

Leiuperus marmoratus, *Dum. & Bibr.* p. 421; *D'Orb. Voy. Amér. mérid.* pl. 15. f. 1–4; *Tschudi, Faun. Per., Rept.* p. 168.

—— viridis, *Tschudi, l. c.* p. 69; *Peters, Mon. Berl. Ac.* 1873, p. 623.

Tongue oval, entire. Vomerine teeth none. Snout rounded, as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum rather indistinct. Fingers rather short, depressed, first extending slightly beyond second; toes rather short, united at the base by a slight web, which extends as a fringe on each side to their tips; subarticular tubercles moderate; a rather large oval inner, and a smaller rounded outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Above with large flat glands, sometimes forming longitudinal folds on the back; smooth beneath. Olive above, with large insuliform brown spots; a brown streak from the tip of the snout through the eye to the shoulder; sometimes a light vertebral stripe; beneath spotted with brown. Male with two subgular vocal sacs; during the breeding-season the inner side of the first digit is furnished with brown rugosities.

S. America.

a–e. Adult & hgr. ♂.	High Peru.	M. Taczanowski [C.].
f. ♂.	S. Domingo (?).	

12. **Paludicola verrucosa.**

Leiuperus verrucosus, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 171.

Differs from *P. marmorata* in the absence of any trace of membrane between the toes.

Brazil.

13. **Paludicola sagittifera.**

Leiuperus sagittifer, *Günth. Cat.* p. 135.
Leiuperus sagittifer, *Schmidt, Denkschr. Ak. Wien,* 1858, p. 240.

Differs from *P. marmorata* by the very narrow interorbital space and the very prominent eyes. Bluish brown above, spotted with chocolate-brown; a light arrow-shaped line from the snout to the vent.

Colombia.

14. **Paludicola falcipes.**

Liuperus falcipes, *Hensel, Arch. f. Naturg.* 1867, p. 134.

Vomerine teeth none. Tympanum hidden. Toes with a well-developed fringe; two metatarsal tubercles; a small tubercle under the forearm. Upper surfaces more or less covered with flat warts; two glandular lines begin behind the eyes, approach each other on the shoulders, then diverge again, thus forming an X-shaped figure. Colour and markings very variable; generally light grey above, with darker, indistinct markings. Male with a large subgular vocal sac.

Brazil.

15. Paludicola nitida.

Liuperus nitidus, *Peters, Mon. Berl. Ac.* 1869, p. 878.

Tongue long and nearly rhomboidal. Vomerine teeth none. Habit slender. Snout subacuminate, rounded, as long as the orbital diameter; nostril nearer the tip of the snout than the eye; tympanum indistinct, one third the width of the eye. First finger a little shorter than second; subarticular tubercles well developed; similar tubercles on the palm and sole. Skin smooth, or with a few very small granules on the back. Greenish above, with darker markings; a dark triangular spot between the eyes; on each side in front of the thigh a blackish, light-green marbled, oval spot; limbs cross-barred; brownish beneath, indistinctly dotted with lighter.

Puebla, Mexico.

16. Paludicola? mexicana.

Leiuperus mexicanus, *Brocchi, Bull. Soc. Philom.* (7) i. p. 184.

Tongue discoid. Vomerine teeth none. Snout truncate, with angular canthus rostralis; tympanum very distinct, not half the width of the eye. Toes rather long and thin, with a very slight rudiment of web which does not extend on their sides; tips of fingers and toes swollen into small disks; subarticular tubercles well developed; two metatarsal tubercles, the inner oval and much larger than the outer. Skin smooth. Greyish above, marbled with black; a black spot behind the tympanum; white beneath, the throat speckled with grey.

Mexico.

13. LEPTODACTYLUS*.

Leptodactylus, *Fitzing. Class. Rept.* p. 38.
Cystignathus, *Wagl. Syst. Rept.* p. 202; *Tschudi, Batr.* p. 78; *Günth. Cat.* p. 27; *Cope, Nat. Hist. Rev.* 1865, p. 112, *and Journ. Ac. Philad.* (2) vi. 1866, p. 96.
Cystignathus, sp., *Dum. & Bibr.* viii. p. 392.
Crossodactylus, *Dum. & Bibr.* viii. p. 635.
? Limnocharis, *Bell, Zool. Beagle, Rept.* p. 32; *Günth. Cat.* p. 23; *Cope, Journ. Ac. Philad.* (2) vi. p. 96.
Pleurodema, sp., *Günth. Cat.* p. 31.
Tarsopterus, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 177.
Gnathophysa, *Cope, Nat. Hist. Rev.* 1865, p. 112, *and Journ. Ac. Philad.* (2) vi. p. 96.
Entomoglossus, *Peters, Mon. Berl. Ac.* 1870, p. 647.

Pupil horizontal. Tongue oval or rounded, entire or slightly nicked, and free behind. Vomerine teeth behind the choanæ. Tympanum very distinct. Fingers and toes free, not or but slightly dilated at the tips. Outer metatarsals united. Omosternum cartilaginous; sternum with a bony style. Terminal phalanges simple.

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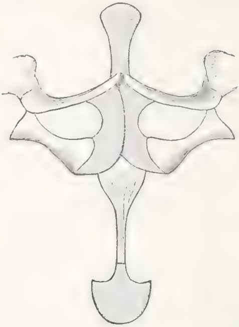
* 1. *Cystignathus hylodes*, Reinh. & Lütk. Vidensk. Meddel. 1861, p. 168.—Brazil.

2. *Cystignathus discolor*, Reinh. & Lütk. *l. c.* p. 169.—Brazil.

3. *Hylodes hallowellii*, Cope, Proc. Ac. Philad. 1862, p. 153; *Cystignathus hallowellii*, Cope, eod. loc. 1868, p. 115.—Carthagena, Colombia.

Tropical America.



Sternal apparatus of *Leptodactylus pentadactylus.*

Synopsis of the Species.

I. Toes without distinct dermal margins.

1. Tongue regularly heart-shaped.

Tympanum half the width of the eye . 1. *pustulatus*, p. 239.

Tympanum two thirds the width of the eye; tibio-tarsal articulation not reaching the eye .... 2. *rhodonotus*, p. 239.

2. Tongue oval or elliptic, entire or slightly nicked behind.

A. Tips of toes dilated into small but distinct disks.

Tibio-tarsal articulation reaching the eye 3. *hylædactylus*, p. 240.

B. Tips of toes not dilated.

a. Tibio-tarsal articulation reaching the tip of the snout.

Tympanum two thirds the width of the eye; vomerine teeth in two slightly arched series .... 4. *longirostris*, p. 240.

Tympanum two thirds the width of the eye; vomerine teeth in a long scarcely interrupted series .... 5. *gracilis*, p. 241.

Tympanum nearly as large as the eye; vomerine teeth in two arched series .. 6. *fragilis*, p. 241.

Two glandular folds on each side of the back, the latter ending in a large flat gland on the groin................ 7. *labrosus*, p. 241.

b. Tibio-tarsal articulation not reaching beyond the nostril.

α. Tympanum at least two thirds the width of the eye.

Snout rounded .... 8. *pentadactylus*, p. 241.
Snout rather prominent; hind limbs regularly cross-barred .... 11. *mystacinus*, p. 244.
Snout acuminate, prominent; back with longitudinal folds .... 15. *typhonius*, p. 246.

β. Tympanum not two thirds the width of the eye.

Snout rounded .... 9. *rubido*, p. 243.
Snout acuminate; tibio-tarsal articulation reaching beyond the eye .... 10. *pœcilochilus*, p. 243.
Snout a little projecting; tibio-tarsal articulation reaching in front of the eye; no glandular lateral fold .... 13. *perlævis*, p. 245.
Snout prominent; tibio-tarsal articulation not reaching beyond the eye .... 14. *albilabris*, p. 245.

γ. Tympanum not half the width of the eye.

No glandular lateral fold .... 12. *microtis*, p. 244.

II. Toes with distinct dermal margins.

1. No membranaceous fold along the tarsus.

Back with longitudinal folds .... 16. *ocellatus*, p. 247.
No longitudinal folds on the back...... 17. *caliginosus*, p. 247.

2. A membranaceous fold along the inner side of the tarsus.

Inner metatarsal tubercle spur-like .... 18. *podicipinus*, p. 248.
Inner metatarsal tubercle oval .... 19. *gaudichaudii*, p. 249.

1. Leptodactylus pustulatus.

Entomoglossus pustulatus, *Peters, Mon. Berl. Ac.* 1870, p. 647.

Tongue heart-shaped. Vomerine teeth in two short series behind the choanæ. Snout rounded; tympanum half the width of the eye. Fingers and toes moderate, pointed, the latter not fringed; first finger a little longer than second. Skin finely wrinkled above. Brown, indistinctly banded longitudinally; beneath with numerous small yellowish-white spots.

Ceara, N. Brazil.

2. Leptodactylus rhodonotus.

Cystignathus rhodonotus, *Günth. Proc. Zool. Soc.* 1868, p. 481, pl. 37. f. 1.

Tongue heart-shaped. Vomerine teeth in two slightly curved series behind the choanæ. Snout rounded, slightly longer than the greatest orbital diameter; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum two thirds the width of the eye. Fingers moderate, first longer than second; toes moderate, not fringed; subarticular tubercles well developed; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the tympanum. Skin smooth; no ventral discoidal fold. Brown above; a broad rose-coloured band occupies the whole back from the nostril to the sacrum; limbs with blackish cross bars; lower parts greyish, white-spotted.

Peru.

a. Hgr. ?	Chyavetas, E. Peru.	Mr. E. Bartlett [C.].	(Type.)

3. **Leptodactylus hylædactylus.**

Cystignathus hylædactylus, *Cope, Proc. Ac. Philad.* 1868, p. 115.

Tongue oval, slightly nicked behind. Vomerine teeth in two slightly arched series behind the choanæ. Snout ovate; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum two thirds the width of the eye. Fingers moderate, first not extending beyond second; toes moderate, not fringed, with distinctly dilated tips; subarticular tubercles strong; two minute metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin of upper surfaces granular; a vertebral and dorsolateral dermal fold, the latter frequently interrupted; a row of elongate warts on each side; a ventral discoidal fold. Brown above, indistinctly marbled with darker; a dark band between the eyes; hind limbs cross-barred; hinder side of thighs dark brown, marbled with white.

E. S. America.

a–b. ♀.	Demerara Falls.

4. **Leptodactylus longirostris.** (PLATE XVI. fig. 3.)

Tongue oval, nicked behind. Vomerine teeth in two slightly arched series behind the choanæ. Snout acuminate, much longer than the greatest orbital diameter; nostril a little nearer the tip of the snout than the eye; interorbital space narrower than the upper eyelid; tympanum two thirds the width of the eye. Fingers moderate, first much longer than second; toes slender, not fringed; subarticular tubercles much developed; a small inner, and a very small, rather indistinct, outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin with a few flat warts above; a glandular lateral fold; a ventral discoidal fold. Brown above, with rather indistinct darker spots; a dark angular spot between the eyes; a blackish-brown streak along the upper lip, the canthus rostralis, and round the tympanum; legs cross-barred; hinder side of thighs with a dark brown network; beneath immaculate.

Brazil.

a–b. ♀.	Santarem.	Mr. Wickham [C.].

5. Leptodactylus gracilis.

Cystignathus gracilis, *Dum. & Bibr.* p. 406; *D'Orb. Voy. Amér. mér., Rept.* p. 10, pl. 13. f. 5-7.
Leptodactylus gracilis, *Espada, Viaj. Pacif., Vertebr.* p. 44.

Tongue subcordiform. Vomerine teeth in a long, scarcely interrupted series behind the choanæ. Snout pointed; tympanum two thirds the width of the eye. Hind limbs and toes very slender; the latter not fringed; two metatarsal tubercles. Brownish above, longitudinally striped with black; hind limbs cross-barred.

Montevideo.

6. Leptodactylus fragilis.

Cystignathus fragilis, *Brocchi, Bull. Soc. Philom.* (7) i. p. 182.
—— gracilis, *Cope, Proc. Amer. Philos. Soc.* xviii. 1879, p. 269.
Leptodactylus fragilis, *Brocchi, Miss. Sc. Mex., Batr.* p. 19, pl. 5. f. 2.

Tongue oblong, slightly nicked behind. Vomerine teeth in two arched series behind the choanæ. Tympanum nearly as large as the eye. Limbs and toes very slender; subarticular tubercles much developed; two metatarsal tubercles. Flanks with two series of small tubercles, and a small glandular fold between them. Brownish above, with rather regular black spots; two triangular spots between the eyes; a black stripe from the tip of the snout to the eye; hind limbs cross-barred.

Tehuantepec.

7. Leptodactylus labrosus.

Leptodactylus labrosus, *Espada, Viaj. Pacif., Vertebr.* p. 36.

Tongue oval, slightly nicked behind. Vomerine teeth in two arched series behind the choanæ. Snout pointed, very prominent. First finger longer than second; toes not fringed; subarticular tubercles well developed; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout. Two glandular lateral folds on each side of the back, the lower ending in a large, irregular, flat porous gland on the groin; a fold from the eye to the shoulder; sides of body and upper eyelids tubercular; a ventral discoidal fold. Brown above; a dark streak from the tip of the snout through the eye to the shoulder; upper lip with dark triangular spots; a dark triangular spot between the eyes; limbs cross-barred.

Ecuador.

8. Leptodactylus pentadactylus.

Cystignathus fuscus, *Günth. Cat.* p. 28.
Pleurodema labyrinthicum, *Günth. l. c.* p. 31.
Seba, i. pl. 75. f. 1.
Rana pentadactyla, *Laur. Syn. Rept.* p. 32.
—— ocellata, *Schneid. Hist. Amph.* i. p. 117; *Daud. Rain.* p. 61, pl. 19, *and Rept.* viii. p. 118; *Gravenh. Delic.* p. 42.
—— gigas, *Spix, Ran.* p. 25, pl. 1; *Peters, Mon. Berl. Ac.* 1872, p. 197.
—— labyrinthica, *Spix, l. c.* p. 31, pl. 7. f. 1, 2; *Peters, l. c.*

Cystignathus pachypus, part., *Wagl. Syst.* p. 203.
—— ocellatus, part., *Tschudi, Batr.* p. 98; *Dum. & Bibr.* p. 396.
—— labyrinthicus, *Dum. & Bibr.* p. 407; *Guichen. in Casteln. Amér. Sud, Rept.* p. 78, pl. 16; *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 165; *Steindachner, Novara, Amph.* p. 23, pl. 5. f. 5.
Gnathophysa labyrinthica, *Cope, Nat. Hist. Rev.* 1865, p. 112.
—— ocellata, *Cope, Journ. Ac. Philad.* (2) vi. p. 73.
—— gigas, *Cope, l. c.*
Cystignathus pentadactylus, *Peters, Mon. Berl. Ac.* 1872, p. 198.
Leptodactylus goliath, *Espada, Viaj. Pacif., Vertebr.* p. 57.
? Leptodactylus stenodema, *Espada, l. c.* p. 64.
Cystignathus ocellatus, *De Betta, Atti Inst. Venet.* ii. (5) 1876.

Tongue oval, slightly nicked behind. Vomerine teeth in two arched series behind the choanæ. Snout rounded, longer than the greatest orbital diameter; nostril a little nearer the tip of the snout than the eye; interorbital space narrower than the upper eyelid; tympanum two thirds or three fourths the width of the eye. Fingers moderate, first much longer than second; toes moderate, not fringed; subarticular tubercles moderate; a small oval inner, and a rather indistinct rounded outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the eye. Skin smooth above, generally with large flat glands on the flanks; a glandular fold from the eye above the tympanum to the shoulder, and generally another along each side of the back to the sacral region; a more or less distinct abdominal discoidal fold. Brownish above, with dark spots generally arranged in transverse bars on the back; a black stripe along the canthus rostralis and the temporal fold; limbs cross-barred; hinder side of thighs black and yellowish marbled. Male with an internal subgular vocal sac, and a strong conical tubercle on the inner side of the first digit, and another, bi- or tricuspid one on each side of the breast; these tubercles covered, during the breeding-season, with a black horny sheath.

S. America.

a. ♂.	Dominica.	Mus. Guilding.
b. ♂.	Demerara.	Col. E. Sabine [P.].
c–f, g–k. ♂ ♀.	Demerara Falls.	
l. ♂.	Surinam.	
m. ♂, stuffed.	Para.	
n. ♀.	Garanhuns, Pernambuco.	W. A. Forbes, Esq. [P.].
o, p. ♂.	Pernambuco.	J. P. G. Smith, Esq. [P.].
q. ♂.	Bahia.	Dr. Wucherer [C.].
r. Skeleton.	Bahia.	
s–t. ♂ ♀.	Brazil.	Leyden Museum.
u, v. Skeletons.	Brazil.	
w–x. Young.	Sarayacu, Ecuador.	Mr. Buckley [C.].
y, z, α, β. ♂ ♀, stuffed.	S. America.	
γ. ♀, stuffed.	S. America.	Haslar Collection.
δ. ♀, stuffed.	S. America.	Gen. Hardwicke [P.].
ε–ζ. ♂ ♀.	—— ?	

9. Leptodactylus rubido.

Gnathophysa rubido, *Cope, Proc. Ac. Philad.* 1874, p. 128.

Tongue oval, slightly nicked behind. Vomerine teeth in two short arched series behind the choanæ. Snout short, rounded; tympanum scarcely more than half the width of the eye. Toes not fringed. The hind limb being carried forwards along the body, the tibio-tarsal articulation falls short to the orbit. Dorsal surface smooth, pustular between the ilia; a glandular lateral fold from the eye to near the groin; another, just below it, extending to the middle of the side; a lateral glandular mass extending from near the axilla to the groin, and occupying the width of the side. Reddish brown or bright red above; a narrow black bar from nostril to tympanum; upper lip broadly black-bordered; hind limbs black. cross-barred; hinder side of thighs faintly pale marbled; a few black spots on the groin; inferior surfaces dark brown, with numerous pale dots, which may be wanting on the gular region, and inosculate on the femur. Male with two spur-like tubercles on the inner side of the first digit; another, tricuspid, on each side of the breast.

Allied to *L. pentadactylus*, but much smaller.

Moyabamba, Peru.

The following specimen, though differing in some respects from the above diagnosis, must, I think, be referred to this species. The differences are:—The tympanum is two thirds the diameter of the eye; there is no second fold below the dorso-lateral, and the lateral glandular mass is much smaller, and rendered besides rather indistinct by the smooth state of the specimen. The coloration is very handsome. The hind part of the head and the back between the lateral folds vinaceous red; a dark-brown bar between the eyes; the space between the canthal and labial streaks beautiful rose; the hind limbs blackish brown, the hinder side of the thighs and the inner side of the calves with regular round white spots; lower surfaces brown, white-spotted.

a. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].

10. Leptodactylus pœcilochilus.

Rana pachypus, juv., *Spix, Test. Ran.* pl. 3. f. 1
Cystignathus pœcilochilus, *Cope, Proc. Ac. Philad.* 1862, p. 156.

Tongue oval, nicked behind. Vomerine teeth in two arched series behind the choanæ. Snout acuminate, moderately prominent, longer than the greatest orbital diameter; nostril a little nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum nearly two thirds the width of the eye. Fingers moderate, first much longer than second; toes moderate, not fringed; subarticular tubercles much developed; two metatarsal tubercles, the outer sometimes indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the nostril. Skin smooth, a narrow glandular lateral fold from the eye to the groin; a ventral disk. Brown above, immaculate or with dark regular spots; a light-edged crescent-shaped band between the eyes; a dark-brown stripe along the canthus rostralis and on the temporal region; limbs cross-barred; hinder side of thighs dark brown, with a more or less distinct longitudinal white stripe. Male with internal vocal sacs; thumb without spine-bearing tubercles.

E. S. America.

a–b. ♂ ♀.	Demerara Falls.	
c–d, e. ♂ ♀.	Surinam.	Hr. A. Kappler [C.].
f. ♀.	Interior of Brazil.	

11. Leptodactylus mystacinus.

Cystignathus schomburgkii, *Günth. Cat.* p. 29.
Cystignathus mystacinus, *Burmeister, Reise La Plata*, ii. p. 532.
—— mystaceus, *Hensel, Arch. f. Naturg.* 1867, p. 125.
Leptodactylus wuchereri, *Espada, Viaj. Pacif., Vertebr.* p. 68.

Tongue oval, indistinctly nicked behind. Vomerine teeth in two slightly arched series behind the choanæ. Snout rounded, slightly prominent, longer than the greatest orbital diameter; nostril nearer the tip of the snout than the eye; interorbital space narrower than the upper eyelid; tympanum two thirds the width of the eye. Fingers moderate, first longer than second; toes moderate, not distinctly fringed; subarticular tubercles moderate; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. Skin smooth, distinctly porous on the back and on the upper surface of the thighs, calves, and tarsi; sides with large oval or rounded glandules; a fold above the tympanum; a ventral discoidal fold. Brown or olive above; upper lip dark brown; a dark-brown stripe from the tip of the snout along the canthus rostralis through the eye to the tympanum; another dark-brown stripe on each side of the back; a few blackish spots on the flanks and on the hind part of the back; hind limbs regularly cross-barred. Male without external vocal sacs.

E. S. America.

a. ♀.	Parana.	Berlin Museum.
b. ♀.	Brazil.	Leyden Museum.
c. Hgr.	Soriano, Uruguay.	— Havers, Esq. [P.].

12. Leptodactylus microtis.

Cystignathus microtis, *Cope, Proc. Amer. Philos. Soc.* xviii. 1879, p. 265.

Vomerine teeth in two short series behind the choanæ. Snout not elongate, without canthus rostralis; tympanum two fifths the width of the eye. Toes without dermal margins. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the posterior border of the orbit. Dorsal skin without glandular folds; an abdominal discoidal fold. Colour above dark brown, with a blackish pale-edged triangle between the eyes, with its apex directed posteriorly; a dark light-edged spot below the front of the orbit; tympanum and a streak behind it blackish.

Guanajuato, Mexico.

13. Leptodactylus perlævis.

Cystignathus perlævis, *Cope, Proc. Amer. Philos. Soc.* xviii. 1879, p. 269.

Tongue a longitudinal oval, entire. Vomerine teeth in two short transverse series behind the choanæ. Snout a little projecting, with distinct canthus rostralis, the nostrils about one third the distance from its apex to the orbit; tympanum not quite two thirds the width of the eye. First finger a little longer than second; foot slender; plantar tubercles insignificant. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in front of the eye. Skin exceedingly smooth and shining, without glandular folds; an abdominal discoidal fold. Dark ashy grey above; sides blackish above, speckled with white and blackish above; an interorbital dark spot; upper lip marbled; posterior face of femora dark, with light specks; posterior limbs obscurely cross-banded.

Tehuantepec.

14. Leptodactylus albilabris. (Plate XVI. fig. 4.)

Cystignathus albilabris, *Günth. Ann. & Mag. N. H.* (3) iv. p. 217; *Reinh. & Lütk. Vidensk. Meddel.* 1862, p. 205.
—— caliginosus, *Brocchi, Bull. Soc. Philom.* (7) i. p. 180.
—— labialis, *Cope, Proc. Amer. Philos. Soc.* xvii. p. 90, *and* xviii. p. 269.
Leptodactylus caliginosus, *Brocchi, Miss. Sc. Mex., Batr.* p. 87, pl. 5. f. 1.
—— labialis, *Brocchi, l. c.* p. 20.
—— albilabris, *Bouleng. Bull. Soc. Zool. France,* 1881, p. 33.

Tongue oval, slightly nicked behind. Vomerine teeth in two slightly curved series behind the choanæ. Snout subacuminate, with prominent upper lip, a little longer than the greatest orbital diameter; nostril a little nearer the tip of the snout than the eye; interorbital space not much narrower than the upper eyelid; tympanum not quite two thirds the width of the eye. Fingers moderate, first longer than second; toes moderate, not fringed; subarticular tubercles well developed; sole with regular series of small tubercles corresponding with the metatarsals; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or not quite so far, Skin smooth, or with small warts above; a glandular lateral fold from the eye to the groin; sometimes a second below it, from the tympanum to the middle of the side; a ventral discoidal fold. Brown or olive above, with more or less distinct darker markings; generally an angular dark spot on the occiput; a dark stripe from the tip of the snout along the canthus rostralis through the eye to the shoulder; limbs cross-barred; hinder side of thighs dark brown, with a more or less distinct white stripe; beneath immaculate, or more or less dotted with brown. Male with two internal vocal sacs; thumb without spine-like tubercles.

W. Indies; Mexico.

a–c, d–g, h–l. ♂, ♀, & yg.	St. Thomas.	Mr. Riise [C.].(Types.)
m. Several spec.: ♂, ♀, hgr., & yg.	Sta. Cruz, W. Indies.	A. Newton, Esq. [P.].
n. ♀.	Tehuantepec.	Brussels Museum [E.].
o. ♂.	——?	

15. Leptodactylus typhonius.

Cystignathus gracilis, *Günth. Cat.* p. 28.
Rana typhonia, *Daud. Rain.* p. 55, pl. 17. f. 3, 4, *and Rept.* viii. p. 106, pl. 95.
—— mystacea, *Spix, Test. Ran.* p. 27, pl. 3. f. 2, 3; *Peters, Mon. Berl. Ac.* 1872, p. 201.
—— sibilatrix, *Wied, Beitr. Naturg. Bras.* i. p. 545, *and Abbild.*
Leptodactylus typhonius, *Fitzing. Class. Rept.* p. 64.
—— sibilatrix, *Fitzing. l. c.*
Cystignathus ocellatus, part., *Tschudi, Batr.* p. 78.
—— typhonius, *Dum. & Bibr.* p. 402; *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 164; *Steindachn. Novara, Amph.* p. 24; *Peters, Mon. Berl. Ac.* 1876, p. 709.
—— schomburgkii, *Troschel, Schomb. Reisen Guiana,* iii. p. 659.
—— gracilis, *Hensel, Wiegm. Arch.* 1867, p. 130.

Tongue oval, nicked behind. Vomerine teeth in two arched series behind the choanæ. Snout acuminate, prominent, longer than the greatest orbital diameter; nostril nearer the tip of the snout than the eye; interorbital space narrower than the upper eyelid; tympanum two thirds the width of the eye. Fingers moderate, first much longer than second; toes moderate, not fringed; subarticular tubercles well developed; two small metatarsal tubercles, the outer very indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or somewhat beyond. Skin with distinct longitudinal folds on the back; a ventral discoidal fold. Olive above, with dark regular spots; sometimes a light vertebral stripe; limbs cross-barred; hinder side of thighs black-and-white marbled. Male with a black external vocal sac on each side of the throat; thumb without spine-bearing tubercles.

E. S. America.

a. ♀.	St. Marthe.	
b–d. ♂.	Para.	R. Graham, Esq. [P.].

16. Leptodactylus ocellatus.

Cystignathus ocellatus, *Günth. Cat.* p. 27.
Rana ocellata, *Linn. Mus. Ad. Frid.* ii. p. 39.
—— pachypus, *Spix, Test. Ran.* p. 26, pl. 2; *Wied, Beitr. Nat. Bras.* i. p. 540.
—— pygmæa, *Spix, l. c.* p. 30, pl. 6. f. 2.
Cystignathus pachypus, *Wagl. Syst.* p. 202, *and Descr. et Icon. Amph.* pl. 21.
—— ocellatus, part., *Dum. & Bibr.* p. 396.
—— ocellatus, *Guichen. in Casteln. Amér. mérid., Rept.* p. 78; *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 163; *Hensel, Arch. f. Naturg.* 1867, p. 123; *Peters, Mon. Berl. Ac.* 1872, p. 199.
Leptodactylus ocellatus, *Gir. Proc. Ac. Philad.* 1853, p. 420, *and U.S. Expl. Exp., Herp.* p. 29, pl. 3. f. 1–6.
—— serialis, *Gir. l. c.* p. 421.
Cystignathus caliginosus, *Burm. Reise La Plata*, ii. p. 532.
Leptodactylus pachypus, *Espada, Viaj. Pacif., Vert.* p. 48.
? Leptodactylus latinasus, *Espada, l. c.* p. 40.

Tongue oval, slightly nicked behind. Vomerine teeth in two arched series behind the choanæ. Snout rounded, longer than the greatest orbital diameter; nostril nearer the tip of the snout than the eye; interorbital space as broad as or narrower than the upper eyelid; tympanum very distinct, three fourths the width of the eye. Fingers moderate, first much longer than second; toes moderate, fringed on each side; subarticular tubercles moderate; a blunt inner metatarsal tubercle, and a very small outer one. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin with distinct longitudinal glandular folds above; quite smooth beneath; a more or less distinct ventral discoidal fold. Olive or brownish above, with regular darker rounded or subquadrangular spots; a large one between the eyes. Male with an internal subgular vocal sac, and two strong tubercles on the inner side of the first digit.

E. S. America.

a–c. Hgr. & yg.	Para.	R. Graham, Esq. [P.].
d–g. ♂, ♀, & yg.	Bahia.	
h. Several spec., ♂ & yg.	Rio Janeiro.	C. Darwin, Esq. [P.].
i. Hgr.	Rio Janeiro.	
k–m, n–o. ♂, ♀, & hgr.	Brazil.	
p–q, r. ♂, ♀, & yg.	Buenos Ayres.	E. W. White, Esq. [C.].

17. Leptodactylus caliginosus.

Cystignathus caliginosus, *Günth. Cat.* p. 28.
Leptodactylus caliginosus, *Girard, Proc. Ac. Philad.* 1853, p. 422, *and U.S. Expl. Exped., Herp.* p. 31; *Bouleng. Bull. Soc. Zool. France*, 1881, p. 30.
Cystignathus melanonotus, *Hallow. Proc. Ac. Philad.* 1860, p. 480; *Cope, Proc. Amer. Philos. Soc.* xviii. p. 269.
Platymantis petersii, *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 254, pl. 16. f. 2.

Cystignathus ocellatus, *Steindachn. l. c.* pl. 11. f. 1.
—— echinatus, *Brocchi, Bull. Soc. Philom.* (7) i. p. 181.
Leptodactylus echinatus, *Brocchi, Miss. Sc. Mex., Batr.* p. 18, pl. 5. f. 4.
—— melanonotus, *Brocchi, l. c.* p. 20.

Tongue oval, nicked behind. Vomerine teeth in two slightly curved series behind the choanæ. Snout rounded, slightly longer than the greatest orbital diameter; nostril nearer the tip of the snout than the eye; interorbital space as broad as or a little narrower than the upper eyelid; tympanum two thirds the width of the eye. Fingers moderate, first extending slightly beyond second; toes moderate, very conspicuously fringed; subarticular tubercles well developed; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or a little beyond. Skin smooth, with a few scattered small warts above; a ventral discoidal fold. Brownish or olive above, with indistinct darker markings; a large angular spot on the occiput; hinder side of thighs marbled or reticulated with dark brown; beneath more or less spotted with brown or grey. Male with an internal vocal sac, and two spine-bearing tubercles on the inner side of the first digit.

Tropical America.

a. ♀.	Tehuantepec.	
b–c. Young.	Mexico.	P. Geddes, Esq. [C.].
d–f. ♂ ♀.	Sarayacu, Ecuador.	Mr. Buckley [C.].
g–i. ♂.	Moyobamba.	Mr. A. H. Roff [C.].
k. ♀.	Pernambuco.	W. A. Forbes, Esq. [P.].
l. ♀.	Bahia.	Dr. O. Wucherer.
m–o, p–r. ♂ ♀.	S. America.	Mus. Guilding.

18. Leptodactylus podicipinus.

Cystignathus podicipinus, *Cope, Proc. Ac. Philad.* 1862, p. 156.

Tongue oval, subemarginate. Vomerine teeth in two short separate rows behind the choanæ. Snout rounded, a little prominent; tympanum half the size of the eye. First finger longer than second; toes with margins as wide as a phalanx, which unite at their bases, forming a slight web; a tarsal fold continuous with that of the internal digit, except where interrupted by a spur-like tubercle. Skin smooth, except a few minute warts on the coccygeal region. Above brown; an elongate, darker, triangular spot between the eyes; a yellowish line extends beneath the eye to the angle of the mouth; femora indistinctly banded, posteriorly marbled with blackish; tibiæ with three brown bands; beneath yellowish brown, with numerous yellow spots.

Paraguay.

This species is perhaps not specifically distinct from the next.

19. Leptodactylus gaudichaudii.

? Limnocharis fuscus, *Günth. Cat.* p. 23.
Crossodactylus gaudichaudii, *Günth. l. c.* p. 90.
Crossodactylus gaudichaudii, *Dum. & Bibr.* p. 90; *Hensel, Arch. f. Naturg.* 1867, p. 149; *Steindachn. Verh. zool.-bot. Ges. Wien*, 1865, p. 499.
? Limnocharis fuscus, *Bell, Zool. Beagle, Rept.* p. 33, pl. 16. f. 3.
Tarsopterus trachystomus, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 177, pl. 3. f. 2.

Vomerine teeth none (sometimes present, according to Hensel). Tongue oval; entire. Snout rounded, as long as the greatest orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum two thirds the width of the eye. Fingers moderate, with slightly swollen tips, first not extending beyond second; toes moderate, margined with a broad membrane, the tips dilated into small disks; a broad membranaceous fold along the inner edge of the tarsus; two very prominent metatarsal tubercles, the inner oval, the outer rounded; subarticular tubercles small. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth or slightly glandular; a fold from the eye to the shoulder; no ventral discoidal fold. Olive above; limbs indistinctly cross-barred. Male without vocal sac, with two small spines on the inner side of the first digit.

Brazil.

a. ♂.	Lagoa Santa.	Prof. Reinhardt [P.]. (As typical of *Tarsopterus trachystomus.*)
? *b.* ♂, very bad state.	Rio Janeiro.	C. Darwin, Esq. [P.]. (Type of *Limnocharis fuscus.*)

14. PLECTROMANTIS.

Plectromantis, *Peters, Mon. Berl. Ac.* 1862, p. 232; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 97.

Pupil horizontal. Tongue oval, slightly emarginate, and free behind. Vomerine teeth behind the choanæ. Tympanum distinct. Fingers and toes free, the tips of the latter, or of both, dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous; xiphisternum with a bony style. Terminal phalanges T-shaped.

Western South America.

Future researches may prove this genus not to be separable from *Leptodactylus*.

1. Plectromantis wagneri.

Plectromantis wagneri, *Peters, l. c.*

Vomerine teeth in two arched series behind the choanæ. Snout rounded, rather prominent ; nostril nearer the tip of the snout than the eye ; tympanum four sevenths the diameter of the eye. Tips of fingers not dilated ; first finger longer than second ; toes with a narrow fringe on each side ; two metatarsal tubercles, inner elongate, outer rounded. Skin smooth ; a large elongate gland between the angle of the mouth and the shoulder, surmounted by another the superior and posterior limits of which are not so distinctly defined. Dark brown above, indistinctly spotted with darker ; beneath dirty white, marbled with black. Male with two spine-bearing tubercles on the inner side of the first digit.

Andes of Ecuador.

2. Plectromantis rhodostigma.

Plectromantis rhodostima, *Cope, Proc. Ac. Philad.* 1874, p. 127.

Vomerine teeth in two short curved series behind the choanæ. Snout truncate ; tympanum smaller than the eye. Fingers and toes with well-marked dilatations, and without dermal margins. Heel of extended hind limb reaching the posterior border of the orbit. Skin smooth. Above uniform brown, below whitish ; snout blackish to the orbits ; femora dark brown behind ; a rose-coloured spot in the groin, one on the superior face of the femur, two on the inferior face of the tibia, and one on the superior face of the tarsus.

Nauta, Upper Amazon.

15. LIMNOMEDUSA.

Cystignathus, sp., *Dum. & Bibr.* viii. p. 392.
Limnomedusa, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 94.
Litopleura, *Espada, Viaj. Pacif., Vertebr.* p. 82.

Pupil erect. Tongue subcircular, free and slightly nicked behind. Vomerine teeth. Tympanum very distinct. Fingers free, toes nearly free, not dilated at the tips. Outer metatarsals united. Omosternum cartilaginous ; sternum with a bony style. Terminal phalanges simple.

Uruguay.

1. Limnomedusa macroglossa.

Cystignathus macroglossus, *Dum. & Bibr.* p. 405.
Limnomedusa macroglossa, *Cope, l. c., and Proc. Amer. Philos. Soc.* xi. 1869, p. 168.
Litopleura maritimum, *Espada, l. c.*

Vomerine teeth in two oblique oval groups on a level with the hinder edge of the choanæ. Snout subacuminate, as long as the greatest orbital diameter; interorbital space half the width of the upper eyelid: tympanum two thirds the diameter of the eye. First finger much longer than second; toes moderate, fringed, with a rudiment of web; subarticular tubercles well developed; a small oval inner, and an indistinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper surfaces covered with flat warts; lower surfaces smooth. Greyish olive above, marbled with darker; hind limbs cross-barred: groin and hinder side of thighs marbled with black. Male with a subgular vocal sac, and blackish rugosities on the inner side of the first, second, and third fingers.

Uruguay.

a. ♂. Montevideo.

16. HYLORHINA.

Hylorhina, *Bell, Zool. Beagle, Rept.* p. 44; *Günth. Cat.* p. 23; *Cope, Nat. Hist. Rev.* 1865, p. 113, *and Journ. Ac. Philad.* (2) vi. 1866, p. 95.

Pupil erect. Tongue circular, free and entire behind. Vomerine teeth. Tympanum distinct. Fingers and toes very long, the former free, the latter webbed at the base; tips of fingers and toes not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum with a broad bony style. Terminal phalanges simple.

Chili.

1. Hylorhina silvatica.

Hylorhina silvatica, *Günth. Cat.* p. 23.

Hylorhina sylvatica, *Bell, l. c.* pl. 19. f. 1; *Espada, Viaj. Pacif., Vertebr.* p. 10.

Cystignathus æneus, *Guichen. l. c.* pl. 5.

Vomerine teeth in a straight series on a level with the hinder edge of the choanæ. Snout short, rounded; interorbital space as broad as the upper eyelid; tympanum very small. Fingers very long, first shorter than second; toes very long, webbed at the base and slightly fringed; subarticular tubercles not much developed; a small, oval, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin with small flat warts above, smooth beneath. Uniform brown (discoloured).

Chili.

a. ♀. Chiloe. C. Darwin, Esq. [P.]. (Type.)

17. BORBOROCŒTES.

Cystignathus, sp., *Dum. & Bibr.* viii. p. 407; *Günth. Cat.* p. 31.
Borborocœtes, *Bell, Zool. Beagle, Rept.* p. 30; *Cope, Nat. Hist. Rev.* 1865, p. 113.
Eusophus, *Cope, l. c., and Journ. Ac. Philad.* (2) vi. 1866, p. 95.
Borborocœtes, sp., *Cope, Journ. Ac. Philad.* (2) vi. p. 94.
Cacotus, *Günth. Proc. Zool. Soc.* 1868, p. 482.
Phrynopus, *Peters, Mon. Berl. Ac.* 1873, p. 416.
Oreobates, *Espada, Ann. Soc. Esp.* i. p. 86.

Pupil horizontal. Tongue subcircular, entire or slightly nicked, and free behind. Vomerine teeth. Tympanum more or less distinct or absent. Fingers free; toes free or nearly so, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges simple or slightly bifurcate.

W. S. America.

Synopsis of the Species.

I. A tympanum.

1. Vomerine teeth between the choanæ.

Subarticular tubercles very strong	1. *nodosus*, p. 253.
Subarticular tubercles moderate; vomerine teeth in two oblique series commencing on a level with the hinder edge of the choanæ; toes not fringed	2. *roseus*, p. 253.
Subarticular tubercles moderate; toes fringed	3. *hidalgoi*, p. 253.
Subarticular tubercles small; fingers and toes slender	4. *tæniatus*, p. 254.

2. Vomerine teeth behind the choanæ.

First finger not longer than second; nostril nearer the tip of the snout than the eye.	5. *grayi*, p. 254.
First finger not longer than second; nostril equally distant from the eye and the tip of the snout	6. *bibronii*, p. 255.
First finger longer than second; nostril much nearer the tip of the snout than the eye	7. *quixensis*, p. 255.
Habit very stout	8. *peruanus*, p. 255.

II. No tympanum.

Snout as long as the greatest orbital diameter.	9. *maculatus*, p. 256.
A conical tubercle on the tibio-tarsal articulation	10. *calcaratus*, p. 256.
Snout shorter than the greatest orbital diameter.........................	11. *coppingeri*, p. 257.

1. Borborocœtes nodosus.

Cystignathus nodosus, *Dum. & Bibr.* p. 413; *Guichen. in Gay, Chile, Rept.* p. 98.
Eusophus nodosus, *Cope, Nat. Hist. Rev.* 1865, p. 113.

Tongue circular, slightly nicked behind. Vomerine teeth in two small groups between the choanæ. Snout short, rounded; tympanum indistinct. Fingers and toes moderate; subarticular tubercles very strong; two small metatarsal tubercles. The hind limb being carried forwards along the body, the foot extends beyond the snout. Scattered small warts on the back; a rather indistinct parotoid gland above the tympanum to the shoulder. Brown above, dotted with black; limbs cross-barred; hinder side of thighs speckled with white; light brown beneath.

Chili.

2. Borborocœtes roseus.

Cystignathus nodosus, *Günth. Cat.* p. 29.
Cystignathus roseus, *Günth. l. c.* p. 134.
Cystignathus roseus, *Dum. & Bibr.* p. 414; *Guichen. in Gay, Chile, Rept.* p. 99, pl. 7. f. 3; *Espada, Viaj. Pacif., Vertebr.* p. 73.
Borborocœtes roseus, *Cope, Nat. Hist. Rev.* 1865, p. 113.
? Cystignathus sylvestris, *Tschudi, Faun. Per.* p. 66, pl. 11. f. 1; *Peters, Mon. Berl. Ac.* 1873, p. 623.

Tongue subcircular, entire. Vomerine teeth in two oblique series commencing on a level with the hinder edge of the choanæ. Snout rounded, slightly longer than the greatest orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum slightly distinct. Fingers moderate, first not extending beyond second; toes moderate, with a slight rudiment of web; subarticular tubercles not much developed; a small inner, and an indistinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, the upper surfaces distinctly porous. Brownish above, indistinctly marbled with darker; a light dorsal stripe.

Chili.

a. ♀.	Chili.	C. Darwin, Esq. [P.].
b. Yg.	S. America.	C. Darwin, Esq. [P.].

3. Borborocœtes hidalgi.

Cystignathus hidalgoi, *Espada, Viaj. Pacif., Vertebr.* p. 76.

Tongue circular, nicked behind. Vomerine teeth in two nearly straight series between the choanæ. Snout rounded; tympanum distinct, vertically elliptic, half the diameter of the eye. First finger as long as second; toes fringed, with a rudimentary web; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout. Skin of upper surfaces glandular and porous, with small tubercles and more or less interrupted longitudinal glandular folds. Brown above, speckled with white on the sides and limbs.

Chili.

4. Borborocœtes tæniatus.

Cystignathus tæniatus, *Günth. Cat.* p. 29.

Cystignathus tæniatus, *Girard, Proc. Ac. Philad.* 1854, p. 226, *and U.S. Naval Astr. Exped.* ii. p. 207, pl. 34. f. 8–11; *Cunningh. Trans. Linn. Soc.* xxvii. p. 467.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two small groups between the choanæ. Snout rounded, longer than the greatest orbital diameter; nostril a little nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum indistinct. Fingers long, slender, first shorter than second; toes long, slender, webbed at the base; tips of fingers and toes slightly swollen; subarticular tubercles small; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth, or with slight, indistinct, longitudinal folds. Greenish, grey, or brown above, minutely speckled with dark brown; a dark streak along the canthus rostralis and on the temporal region; a more or less distinct one along each side of the back; a dark-brown inguinal spot.

Chili.

a–b. ♀.	Valdivia.	
c. ♀.	Chiloe.	Dr. Cunningham [P.].

The following specimen, type of *Litoria glandulosa*, Bell, Zool. Beagle, p. 42, pl. 18. f. 4, probably belongs to this species, but, as already stated by Dr. Günther (Cat. p. 96), it is in too bad a condition to be properly determined.

d. ♀.	Concepcion.	C. Darwin, Esq. [P.].

5. Borborocœtes grayi.

Cystignathus grayii, *Günth. Cat.* p. 30.

Borborocœtes grayii, *Bell, Zool. Beagle, Rept.* p. 36, pl. 17. f. 2; *Guichen. in Gay, Chile, Rept.* p. 106.

Tongue cordiform, entire. Vomerine teeth in two short, slightly oblique series behind the choanæ. Snout rounded, slightly longer than the greatest orbital diameter; nostril nearer the tip of the snout than the eye; tympanum slightly distinct, half the diameter of the eye. Fingers moderate, first a little shorter than second; toes moderate, webbed at the base; subarticular tubercles rather indistinct; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth. Brown above (with white markings on the flanks and limbs [*Bell*]). Male with an internal vocal sac.

Valdivia.

a. ♂.	Valdivia.	C. Darwin, Esq. [P.].	(Type.)

6. **Borborocœtes bibronii.**

Cystignathus bibronii, *Günth. Cat.* p. 31.
Borborocœtes bibronii, *Bell, Zool. Beagle, Rept.* p. 37, pl. 17. f. 1; *Guichen. in Gay, Chile, Rept.* p. 105.

Tongue subcircular, entire. Vomerine teeth in two small groups behind the choanæ. Snout rounded, a little longer than the greatest orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space broader than the upper eyelid; tympanum moderately distinct, hardly half the diameter of the eye. Fingers moderate, first not extending beyond second; toes moderate, webbed at the base; subarticular tubercles not much developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth. Brownish above.

Valdivia and Chiloe.

a. ♀.	Chonos.	C. Darwin, Esq. [P.].	(Type.)

7. **Borborocœtes quixensis.**

Oreobates quixensis, *Espada, An. Soc. Esp.* i. p. 86, *and Viaj. Pacif., Vertebr.* p. 99, pl. 3. f. 5.

Tongue subcircular, indistinctly nicked behind. Vomerine teeth in two short straight series behind the choanæ. Snout rounded, longer than the greatest orbital diameter; nostril much nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers moderate, first longer than second; toes moderate, not fringed: subarticular tubercles very strong; two very prominent metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper surfaces with closely-set tubercles and small warts. Greyish above, indistinctly marbled with darker; upper lip with vertical brown stripes; limbs cross-barred; lower surfaces marbled with brown. Male without vocal sac.

Ecuador.

a–b. ♂ ♀.	Canelos.	Mr. Buckley [C.].
c–d. ♂.	Sarayacu.	Mr. Buckley [C.].

8. **Borborocœtes peruanus.**

Phrynopus peruanus, *Peters, Mon. Berl. Ac.* 1873, p. 416, pl. 4. f. 2.

General appearance of *Paludicola marmorata*, but with shorter extremities, and vomerine teeth in two oblique groups behind the choanæ. Tympanum distinct, very small. Skin slightly warty. Dark olive-brown above, marbled with darker; sometimes a light vertebral line; beneath light violet, marbled with black.

Maraynioc, Peru.

9. Borborocœtes maculatus.

? Cystignathus nebulosus, *Girard, U.S. Expl. Exped., Herp.* p. 33, pl. 3. f. 19–23.
Cacotus maculatus, *Günth. Proc. Zool. Soc.* 1868, p. 482, pl. 38. f. 5.
? Eusophus nebulosus, *Cope, Proc. Amer. Philos. Soc.* xi. 1869, p. 168.

Tongue slightly nicked behind. Vomerine teeth in two small transverse series between the choanæ. Snout rounded, as long as the greatest orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; no tympanic disk. First finger not extending beyond second; toes quite free, slightly fringed; subarticular tubercles much developed; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the hinder edge of the eye. Upper surfaces with very small smooth tubercles. Greenish olive above, marbled with brownish; a dark band across the forehead from one eye to the other; a black band along the canthus rostralis and from the eye to the arm-pit; limbs with black cross bands. Throat and abdomen whitish, marbled with blackish.

Chili.

a–b. ♀?	Chili.	(Types.)

10. Borborocœtes calcaratus. (Plate XVII. fig. 1.)

Cacotus calcaratus, *Günth. Proc. Zool. Soc.* 1881, p. 19.

Tongue slightly nicked behind. Vomerine teeth in two oblique groups behind the choanæ. Snout rounded, as long as the greatest orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; no tympanic disk. First finger not extending as far as second; toes free, slightly fringed; subarticular tubercles well developed; two small but very prominent metatarsal tubercles; a conical tubercle on the tibio-tarsal articulation. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Upper surfaces with very minute tubercles; a V-shaped glandular ridge on the back. Pinkish brown above, indistinctly marked with darker; a brown streak below the canthus rostralis; another, broader, from the eye to the middle of the side; limbs cross-barred.

Chiloe.

a. Hgr.	Chiloe.	(Type.)

11. **Borborocœtes coppingeri.** (PLATE XVII. fig. 2.)

Cacotus coppingeri, *Günth. Proc. Zool. Soc.* 1881, p. 19.

Tongue entire. Vomerine teeth in two strong oblique series between the choanæ. Head depressed; snout rounded, shorter than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; no tympanic disk. First finger not extending beyond second; toes slightly fringed, with a rudiment of web; subarticular tubercles well developed; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the hinder edge of the eye. Skin of upper surfaces with very minute tubercles. Olive above.

W. coast of Patagonia.

a. ♀.	W. coast of Patagonia.	Dr. Coppinger [C.]. (Type.)

Cyclorhamphus fasciatus, Peters, Mon. Berl. Ac. 1869, p. 789 (*Cystignathus fasciatus*, id. ibid. p. 881), appears to belong to this genus.

Vomerine teeth in two oblique series, a little behind the level of the hinder edge of the choanæ. Tongue entire. Toes free. No palmar tubercle; two metatarsal tubercles. Skin quite smooth. Brown, with dark cross bars.

Puerto Montt, Chili.

18. ZACHÆNUS.

Zachænus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 94.

Pupil horizontal. Tongue subcircular, entirely adherent. Vomerine teeth in a transverse series upon palatine arch. Tympanum distinct. Fingers and toes free, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges simple.

Brazil.

1. **Zachænus parvulus.**

Cystignathus parvulus, *Girard, U.S. Explor. Exped., Herp.* p. 35, pl. 3. f. 34–38.
Zachænus parvulus, *Cope, l. c.*

Vomerine teeth disposed upon a transverse series, scarcely interrupted in the middle, and obliquely situated behind the choanæ. Snout rounded; tympanum smaller than the eye. Fingers depressed, first longer than second; toes slender, depressed, bordered by a membranous fold; two metatarsal tubercles. Hind limb a little longer than head and body. Skin everywhere perfectly smooth. Light yellowish or reddish brown above; a chestnut-brown vitta extends from the snout, over the nostrils, to the anterior rim of the eye; behind the eye the vitta is superiorly margined with white, and runs obliquely towards the occiput, hence, diverging towards the sides, terminates about the middle of the trunk; legs barred with blackish brown; reddish brown beneath; on each side a blackish-brown, elongated, tapering patch, proceeding from the belly, inclined anteriorly towards the chest.

Rio Janeiro.

19. LIMNODYNASTES.

Limnodynastes, *Fitzinger, Syst. Rept.* p. 31; *Günth. Cat.* p. 32; *Cope, Nat. Hist. Rev.* 1865, p. 113.
Cystignathus, sp., *Dum. & Bibr.* viii. p. 409.
Perialia, *Gray, in Eyre's Journ. Exped. Centr. Austr.* i. p. 406.
Wagleria, *Girard, Proc. Ac. Philad.* 1853, p. 421.
Platyplectrum, *Günth. Ann. & Mag. N. H.* (3) xi. p. 27; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 94.
Opisthodon, *Steindachn. Novara, Amph.* p. 9.
Heliorana, *Steindachn. l. c.* p. 32.
Borborocœtes, sp., *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 94.

Pupil erect. Tongue subcircular, entire or slightly nicked, and free behind. Vomerine teeth in a series behind the choanæ. Ear perfectly developed; tympanum not, or but slightly distinct. Fingers free; toes free or slightly webbed, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges simple.

Australia.

Synopsis of the Species.

I. Inner metatarsal tubercle small, blunt.

Tarso-metatarsal articulation reaching beyond the tip of the snout; snout much longer than the orbital diameter	1. *peronii*, p. 258.
Tarso-metatarsal articulation not reaching the tip of the snout; first finger a little longer than second	2. *salminii*, p. 259.
Tarso-metatarsal articulation not reaching the tip of the snout; first finger not extending quite as far as second	3. *tasmaniensis*, p. 260.
Tarso-metatarsal articulation reaching the tip of the snout; snout not longer than the orbital diameter	4. *platycephalus*, p. 260.

II. Inner metatarsal tubercle large, shovel-shaped.

A large parotoid-like gland on the calf ..	5. *dorsalis*, p. 261.
No large gland on the calf	6. *ornatus*, p. 262.

1. Limnodynastes peronii.

Limnodynastes peronii, *Günth. Cat.* p. 134.
Cystignathus peronii, *Dum. & Bibr.* p. 409.

Wagleria peronii, *Girard, Proc. Ac. Philad.* 1853, p. 421.
Limnodynastes krefftii, *Günth. Ann. & Mag. N. H.* (3) ii. p. 26; *Steindachn. Novara, Amph.* p. 26.
—— peronii, *Keferst. Götting. Nachr.* 1867, p. 343, *and Arch. f. Naturg.* 1868, p. 257, pl. 5. f. 1.

Habit of *Discoglossus*. Tongue subcircular, slightly nicked behind. Vomerine teeth in a straight or slightly arched, scarcely interrupted series behind, and extending outwards beyond the choanæ. Snout blunt, much longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum slightly visible. First and second fingers equal; three metacarpal tubercles; toes elongate, free, slightly fringed; subarticular tubercles well developed; a small, blunt, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches beyond the tip of the snout. Skin smooth, or with very indistinct longitudinal folds on the back; a glandular fold from below the eye to the shoulder. Brownish or olive above, with black spots confluent into longitudinal stripes on the back; frequently a light vertebral line; a dark stripe from the tip of the snout along the canthus rostralis, through the eye to the shoulder; beneath more or less speckled with brown. Male with a subgular vocal sac; female with a fringe along the first and second fingers.

Australia.

a. ♂.	Van Diemen's Land.	Sir A. Smith [P.].
b, c, d–f. ♂, ♀, & yg.	Sydney.	G. Krefft, Esq. [P.]. (Types of *Limnodynastes krefftii.*)
g. ♂.	Queensland.	G. Krefft, Esq. [P.].
h–i. ♂ ♀.	Erromanga.	
k. ♂.	——?	C. Darwin, Esq. [P.].

2. Limnodynastes salminii.

Limnodynastes salmini, *Steindachn. Novara, Amph.* p. 27, pl. 4. f. 12–15; *Keferst. Arch. f. Naturg.* 1868, p. 259.

Habit stout. Tongue subcircular, slightly nicked behind. Vomerine teeth in a straight, scarcely interrupted series behind, and extending outwards beyond the choanæ. Snout rounded, a little longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum slightly visible. First finger a little longer than second; a tubercle between the first and second, and the second and third fingers; three metacarpal tubercles; toes rather short, free; subarticular tubercles well developed; a small, blunt, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye, or between the eye and the nostril. Skin smooth; a glandular fold from below the eye to the shoulder. Olive above, with round blackish spots; a blackish streak from the eye to the shoulder; three more or less distinct pink stripes along the back; sides of body and limbs blackish, dotted with white; throat marbled with brown. Male with a subgular vocal sac; female with a fringe along the second finger.

Australia.

a. Hgr.	Sydney.	
b, c. Hgr. & yg.	Clarence River.	G. Krefft, Esq. [C.].
d, e. ♂ ♀.	Rockhampton.	Hr. Dämel [C.].
f. Yg.	Port Denison.	

3. **Limnodynastes tasmaniensis.**

Limnodynastes tasmaniensis, *Günth. Cat.* p. 33, pl. ii. f. B.
Limnodynastes affinis, *Günth. Ann. & Mag. N. H.* (3) ii. p. 27.
—— tasmaniensis, *Steindachn. Novara, Amph.* p. 26; *Keferst. Arch. f. Naturg.* 1868, p. 258.
—— peronii, var. tasmaniensis, *Keferst. Götting. Nachr.* 1867, p. 344.

Habit moderate. Tongue subcircular, slightly nicked behind. Vomerine teeth in a straight, scarcely interrupted series behind, and not extending outwards beyond the choanæ. Snout rounded, longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as, or narrower than, the upper eyelid; tympanum indistinct. First finger not extending quite as far as second; three metacarpal tubercles; toes moderate, slightly fringed; a small blunt inner, and a very small outer metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye, or between the eye and the nostril. Skin smooth or with hardly conspicuous warts above; a glandular fold from below the eye to the shoulder. Olive above, with insuliform dark spots; a dark streak from the tip of the snout, through the eye, to the shoulder; generally a light vertebral line. Male with a subgular vocal sac, and, during the breeding-season, blackish rugosities on the inner side of the two inner digits; female with the two inner digits broadly fringed.

Tasmania; Australia.

a–c. ♀.	Tasmania.	R. Gunn, Esq. [P.].	(Types of *L. tasmaniensis.*)
d–g. ♂ & hgr.	Tasmania.	Sir A. Smith [P.].	
h. Several spec., ♂ ♀.	Sandhurst, Victoria.	Col. Beddome [P.].	
i–k. ♀.	Queensland.	G. Krefft, Esq. [P.].	
l. ♀.	Clarence River.	G. Krefft, Esq. [C.].	(Type of *L. affinis.*)
m. ♂.	Rockhampton.		
n–o. ♂.	New Holland.	J. B. Jukes, Esq. [P.].	Types of *L. tasmaniensis.*
p–q. ♀ & yg.	New Holland.		

4. **Limnodynastes platycephalus.** (PLATE XVII. fig. 3.)

Limnodynastes platycephalus, *Günth. Ann. & Mag. N. H.* (3) xx. p. 54.

Closely allied to *L. tasmaniensis*, from which it differs by a much depressed head, a shorter snout, the length of which equals the orbital diameter, and longer hind limbs, the tarso-metatarsal articulation reaching the tip of the snout.

S. Australia.

a–b. ♂.	Adelaide.	G. Krefft, Esq. [P.].	(Types.)

5. Limnodynastes dorsalis.

Limnodynastes dorsalis, *Günth. Cat.* p. 33.
Cystignathus dorsalis, *Gray, in Grey's W. Austr.* p. 466, *and in Eyre's Journ. Exped. Centr. Austr.* i., *App.* p. 407, pl. 1. f. 2.
Wagleria dorsalis, *Girard, Proc. Ac. Philad.* 1853, p. 421.
Limnodynastes (Platyplectron) dumerilii, *Peters, Mon. Berl. Ac.* 1863, p. 235.
Heliorana grayi, *Steindachn. Novara, Amph.* p. 32, pl. 2. f. 11–14.
Platyplectrum superciliare, *Keferst. Götting. Nachr.* 1867, p. 346.
Heliorana superciliaris, *Keferst. Arch. f. Naturg.* 1868, p. 267, pl. 5. f. 7.
Limnodynastes dorsalis, *Günth. Journ. Mus. Godeffr.* xii. 1876, p. 47.

Habit of *Pelobates*. Tongue subcircular, slightly nicked behind. Vomerine teeth in a straight, scarcely interrupted series behind, and not extending outwards beyond the choanæ. Snout rounded, longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout, or a little nearer the eye; interorbital space as broad as the upper eyelid; tympanum very indistinct. First and second fingers equal; a tubercle between the first and second, and the second and third fingers; toes rather short, with a slight rudiment of web; subarticular tubercles well developed; a large, shovel-shaped inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches in front of the eye. Skin smooth, or with flat glands on the back; an elongated white gland from beneath the eye to the shoulder; a large parotoid-like gland on the calf. Brown or olive above, darker marbled; a broad dark streak from the eye to the shoulder; often a light vertebral line; beneath immaculate, or more or less spotted with brown. Male with a subgular vocal sac; female with a fringe along the inner side of the second, and frequently also the third finger.

Australia.

a. ♂.	W. Australia.	J. Gould, Esq. [P.].	(Type.)
b. Yg.	W. Australia.		
c. ♂.	Houtmans Abrolhos.		
d–e, f–g. ♂, ♀, & hgr.	Adelaide.	G. Krefft, Esq. [P.].	
h–l. ♂, ♀, & yg.	Queensland.	G. Krefft, Esq. [P.].	
m–n. ♂ ♀.	Gayndah.	Mus. Godeffroy.	
o–p. ♂ ♀.	Port Essington*.	Dr. Fleming [P.].	

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* The stomach of the female contains a half-grown *Heleioporus albo-guttatus*.

6. Limnodynastes ornatus.

Limnodynastes ornatus, *Günth. Cat.* p. 33.
Discoglossus ornatus, *Gray, Zool. Misc.* p. 56.
Perialia ornata, *Gray, in Eyre's Journ. Exped. Centr. Austr.* i., *App.* p. 407, pl. 2. f. 2.
Platyplectrum marmoratum, *Günth. Ann. & Mag. N. H.* (3) xi. p. 27, pl. 4. f. A; *Keferst. Götting. Nachr.* 1867, p. 345, *and Arch. f. Naturg.* 1868, p. 261.
—— occidentale, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 90.
—— ornatum, *Keferst. Götting. Nachr.* 1867, p. 346, *and Arch. f. Naturg.* 1868, p. 261.
Opisthodon frauenfeldii, *Steindachn. Novara, Amph.* p. 9, pl. 1. f. 1–4.
Limnodynastes ornatus, *Günth. Zool. Rec.* iv. p. 145.

Habit of *Alytes obstetricans*. Tongue subcircular, entire or slightly nicked behind. Vomerine teeth in a straight or slightly arched, scarcely interrupted series behind, not extending outwards beyond the choanæ. Snout rounded, as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space narrower than the upper eyelid; tympanum indistinct. First and second fingers equal; two metacarpal tubercles; toes rather short, one-third webbed, the web extending as a fringe to their tips; subarticular tubercles well developed; inner metatarsal tubercle large, shovel-shaped. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye, or between the eye and the tip of the snout. Skin of upper surfaces with small smooth tubercles. Olive above, marbled with darker; generally a light, dark-edged cross band between the eyes; sometimes a light spot on the occiput; sometimes a light vertebral stripe; beneath immaculate. Male with a subgular vocal sac and, during the breeding-season, brown rugosities on the inner side of the two first digits.

Australia.

a. ♂.	Port Essington.	(Type of *Discoglossus ornatus*.)
b–d. ♂ ♀.	Port Denison.	
c–g[*]. ♂ ♀.	Port Denison.	G. Krefft, Esq. [P.].
h–l. ♀ & hgr.	Cape York.	
m. ♂.	N. Australia.	J. R. Elsey, Esq. [P.].
n–o. ♀.	Peak Downs.	Mus. Godeffroy.
p. ♂.	Clarence River.	G. Krefft [C.]. (Type of *Platyplectrum marmoratum*.)

20. CRYPTOTIS.

Cryptotis, *Günth. Ann. & Mag. N. H.* (3) xi. 1863, p. 27; *Cope, Nat. Hist. Rev.* 1865, p. 107, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.

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[*] The female has on the breast two cicatrices which are evidently caused by the thumbs of the male; this proves that the male seizes the female under the axillæ, and not round the waist as in *Pelobatidæ* and *Bombinatoridæ*, with which *Limnodynastes* bears great external resemblance.

Pupil horizontal. Tongue suboval, entire and free behind. Vomerine teeth. Tympanum hidden. Fingers and toes free, the tips not dilated. Outer metatarsals united. Omosternum rudimentary; sternum a cartilaginous plate. Diapophyses of sacral vertebra slightly dilated. Terminal phalanges simple.

Australia.

1. Cryptotis brevis.

Cryptotis brevis, *Günth. Ann. & Mag. N. H.* (3) xi. p. 27, pl. 4. f. B; *Steindachn. Novara, Amph.* p. 30; *Keferst. Arch. f. Naturg.* 1868, p. 268.

Vomerine teeth in two small groups behind the choanæ. Head large in the male, moderate in the female; two long tooth-like processes in front of the lower jaw in the former; these processes indistinct in the latter. Snout rounded, longer than the orbital diameter; canthus rostralis indistinct; nostril nearer the eye than the tip of the snout; interorbital space broader than the upper eyelid. Fingers moderate, first shorter than second; in the female the two inner fringed on their sides; toes moderate, slightly fringed; subarticular tubercles well developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the angle of the mouth. Skin smooth, or slightly tubercular on the back. Olive-brown above, spotted with darker; a large dark spot between the eyes; a dark streak from the tip of the snout to the eye; limbs cross-barred; lower surfaces black- and white-marbled. Male with a subgular vocal sac.

Australia.

a, b. ♂.	Clarence River.	G. Krefft, Esq. [C.].	(Types.)
c. ♂.	Macquarie River.	G. Krefft, Esq. [C.].	
d. Many sp.: ♂, ♀, hgr., & yg.	Macquarie River.	G. Krefft, Esq. [P.].	

21. CRINIA.

Crinia, *Tschudi, Batr.* p. 78; *Cope, Nat. Hist. Rev.* 1865, p. 114, *and Journ. Ac. Philad.* (2) vi. 1866, p. 95.
Cystignathus, sp., *Dum. & Bibr.* viii. p. 392; *Günth. Cat.* p. 26.
Ranidella, *Girard, Proc. Ac. Philad.* 1853, p. 421.
Pterophrynus, *Lütken, Vidensk. Meddel.* 1862, p. 302.
Camariolius, *Peters, Mon. Berl. Ac.* 1863, p. 236.

Pupil horizontal. Tongue elliptic, entire, and free behind. Vomerine teeth very slightly developed or absent. Tympanum slightly distinct or hidden, or absent. Fingers and toes free, not dilated at the tips. Outer metatarsals united. Omosternum cartilaginous; sternum narrow, weak, cartilaginous. Diapophyses of sacral vertebra slightly dilated. Terminal phalanges simple.

Australia.

Synopsis of the Species.

I. Lower surfaces granulate.

Tympanum slightly distinct; belly immaculate; loins and sides of thighs carmine	1. *georgiana*, p. 264.
Tympanum quite hidden; belly dark spotted or marbled	2. *signifera*, p. 265.

II. Lower surfaces smooth.

Subarticular tubercles of fingers and toes and metatarsal tubercles very distinct ..	3. *tasmaniensis*, p. 266.
Subarticular and metatarsal tubercles indistinct; toes not fringed	4. *lævis*, p. 266.

1. Crinia georgiana.

Cystignathus georgiana, *Günth. Cat.* p. 30.
Crinia georgiana, (*Bibr.*) *Tschudi, Batr.* p. 78; *Keferst, Götting. Nachr.* 1867, p. 347, *and Arch. f. Naturg.* 1868, p. 263.
Cystignathus georgianus, *Dum. & Bibr.* p. 416.
? Crinia ignita, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Pterophryne georgiana, *Günth. Ann. & Mag. N. H.* (3) xx. p. 53.

Vomerine teeth in two very small, indistinct groups behind the choanæ, seldom missing. Snout rounded, a little longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum generally slightly distinct. First finger a little shorter than second; toes not or but slightly fringed; subarticular tubercles well developed; two small metatarsal tubercles; a very distinct tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the shoulder and the eye. Lower surfaces granulate. Back with small warts. Brownish or pinkish above, marbled with darker; loins, front and hinder side of thighs and inner side of tibiæ carmine. Male with a subgular vocal sac.

Australia.

a. ♀.	King George's Sound.	G. Krefft, Esq. [P.].
b. Several spec.: ♂, ♀, & hgr.	Sydney.	
c–d, e. ♂ ♀.	Port Essington.	Dr. Fleming [P.].
f. ♀.	Australia.	Dr. A. Günther [P.].
g–h. ♀.	Australia.	G. Krefft, Esq. [P.].

Var. stolata.

Cystignathus georgianus, *Bell, Zool. Beagle, Rept.* pl. 16. f. 4.
Crinia stolata, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 201.

Back with strong dermal folds—one from each upper eyelid along the back, approaching the other at scapulæ; another from the posterior angle of the eye to the side; two converging on parietal regions and one on the middle of the snout. Middle of the back dark brown; a broad dorso-lateral pinkish band, dark margined below; groin and hinder side of thighs carmine.

i–k. ♀ & yg.	King George's Sound.	G. Krefft, Esq. [P.].
l. ♂.	Port Essington.	Dr. Fleming [P.].
m. ♀.	Australia.	C. Darwin, Esq. [P.].
n–q. ♀.	Australia.	G. Krefft, Esq. [P].

VAR. **affinis.**

Pterophrynus affinis, *Günth. Proc. Zool. Soc.* 1864, p. 47, pl. 7. f. 21.

Skin quite smooth above; a dark lateral stripe.

r. ♀.	W. Australia.	Hr. Dämel [C.].

2. Crinia signifera.

Crinia (Ranidella) signifera, *Girard, Proc. Ac. Philad.* 1853, p. 422; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 203.
Pterophrynus verrucosus, *Reinh. & Lütk. Vidensk. Meddel.* 1862, p. 302, pl. 1. f. 4.
—— varius, *Steindachn. Novara, Amph.* p. 31, pl. 2. f. 1–6.
—— fasciatus, *Steindachn. l. c.* p. 31, pl. 5. f. 3–4.
Crinia stictiventris, *Cope, l. c.* p. 202.
—— georgiana, var. varia, *Keferst. Götting. Nachr.* 1867, p. 348.
—— verrucosa, *Günth. Proc. Zool. Soc.* 1868, p. 478.
—— fasciata, *Günth. l. c.*
—— varia, *Keferst. Arch. f. Naturg.* 1868, p. 264, pl. 6. f. 11–13.

Vomerine teeth none. Snout rounded, as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum quite hidden. First finger shorter than second; toes fringed; subarticular tubercles moderate; two small metatarsal tubercles; a slight tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the temporal region. Upper surfaces warty, the warts often confluent into longitudinal lines on the back; lower surfaces granulate. Olive above, marbled or longitudinally striped with darker; a dark triangular spot between the eyes; a light spot above the vent; lower surfaces more or less marbled with brown. Male with the throat blackish, and a subgular vocal sac.

Australia.

a. ♀.	Sydney.	
b–d. ♀.	Sydney.	G. Krefft, Esq. [P.].
e–h. ♀.	Sydney.	G. Krefft, Esq. [P.]. (As *Cystignathus sydneyensis.*)
i–l. ♀ & hgr.	Abrolhos.	Dr. A. Günther [P.].
m. ♀.	W. Australia.	
n–p. ♂ ♀.	Australia.	C. Darwin, Esq. [P.].
q. ♂.	Australia.	Earl of Derby [P.].

3. Crinia tasmaniensis.

Pterophrynus tasmaniensis, *Günth. Proc. Zool. Soc.* 1864, p. 48, pl. 7. f. 3, *and Ann. & Mag. N. H.* (3) xiv. p. 313.
Crinia tasmaniensis, *Keferst. Arch. f. Naturg.* 1868, p. 265.

Vomerine teeth none. Snout rounded, slightly longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum quite hidden. First finger shorter than second; toes fringed; subarticular tubercles moderate; two small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanic region. Upper and lower surfaces smooth. Upper parts dark brown, with a more or less distinct broad reddish-olive band running from behind the eye towards the loin; lower parts beautifully rose-coloured, largely marbled with black; hinder side of thighs black. Male with a subgular vocal sac.

Tasmania.

a. Several spec., ♂ ♀.	Tasmania.	(Types.)

4. Crinia lævis.

Pterophrynus lævis, *Günth. Proc. Zool. Soc.* 1864, p. 48, pl. 7. f. 3, *and Ann. & Mag. N. H.* (3) xiv. p. 314.
Crinia lævis, *Keferst. Arch. f. Naturg.* 1868, p. 265.

Vomerine teeth none. Snout rounded, a little longer than the orbital diameter; nostril a little nearer the eye than the tip of the snout; interorbital space broader than the upper eyelid; tympanum quite hidden. First finger very short; toes not fringed; subarticular and metatarsal tubercles indistinct; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Upper and lower surfaces smooth. Brownish olive above, with small scattered yellow spots; lower surfaces spotted with brown.

Tasmania.

a. ♀.	Tasmania.	Dr. Milligan.	(Type.)

Camariolius varius, Peters, Mon. Berl. Ac. 1863, p. 236.—Under this name Prof. Peters appears to have confounded two species. Thus, he says, "Unterseite glatt oder mit dichtgedrängten Warzen an Bauch und Brust." Mr. Cope retains the name *Crinia varia* for the smooth-bellied form, and he justly observes that the presence or absence of granules on the lower surfaces must be of specific importance and not a sexual character, as believed by Dr. Steindachner. In this I perfectly agree with Mr. Cope, as I have seen male and female of *C. georgiana* and *signifera*.

Peters's smooth-bellied specimens are perhaps identical with *C. tasmaniensis*, those with granulate belly with *C. signifera*. But the description is too vague to permit an identification with these species.

22. HYPEROLIA.

Uperoleia, *Gray, Grey's W. Austr.* p. 448; *Günth. Cat.* p. 39.
Hyperolia, *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. 1866, p. 94.

Pupil erect. Tongue elliptic, entire, and free behind. Vomerine teeth none. Tympanum hidden. Fingers and toes free, the tips not dilated. Outer metatarsals united. Omosternum rudimentary; sternum small, cartilaginous. Diapophyses of sacral vertebra slightly dilated. Terminal phalanges simple.

Australia.

1. Hyperolia marmorata.

Uperoleia marmorata, *Günth. Cat.* p. 39.
Uperoleia marmorata, *Gray, Grey's W. Austr.* p. 448; *Steindachn. Novara, Amph.* p. 33; *Keferst. Götting. Nachr.* 1867, p. 349, *and Arch. f. Naturg.* 1868, p. 270, pl. vi. f. 14.

Habit stout. Snout short, rounded, with indistinct canthus rostralis; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid. Fingers and toes blunt; first finger shorter than second; subarticular tubercles well developed; two subequal, oval, metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Upper surfaces minutely tubercular; a large parotoid; lower surfaces smooth. Brownish or olive above, marbled with darker; a dark triangular spot between the eyes; frequently a large white spot on the loin, and another on the hinder side of the thigh; beneath, brownish or greyish, spotted with darker. Male with a subgular vocal sac.

Australia.

a–d. ♀ & hgr.	Sydney.	G. Krefft, Esq. [C.].
e. ♂.	Sydney.	
f. ♀.	Sydney.	Dr. A. Günther [P.].
g–h. ♀.	Queensland.	G. Krefft, Esq. [P.].
i. ♂.	W. Australia.	(Type.)
k. ♂.	Cape York.	

23. CHIROLEPTES.

Chiroleptes, *Günth. Cat.* p. 34; *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. 1867, p. 93.
Phractops, *Peters, Mon. Berl. Ac.* 1867, p. 30.
Cyclorana, *Steindachn. Novara, Amph.* p. 29.

Pupil vertical. Tongue subcircular or elliptic, entire, or slightly nicked, and free behind. Vomerine teeth. Ear perfectly developed. Fingers free, first opposite to the others; toes more or less webbed; tips of fingers and toes not dilated; inner metatarsal tubercle oval, compressed, generally shovel-shaped. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra slightly dilated.

Australia.

Synopsis of the Species.

I. Toes entirely webbed; tympanum indistinct.

Tongue entire.......................... 1. *platycephalus*, p. 268.

II. Toes not more than half webbed; tympanum very distinct.

1. Inner metatarsal tubercle large, shovel-shaped; no outer tubercle.

Tongue subcircular; nostril equally distant from the eye and the tip of the snout; toes hardly one-third webbed.. 2. *brevipalmatus*, p. 269.

Tongue elliptic; nostril a little nearer the tip of the snout than the eye; toes not half webbed...................... 3. *brevipes*, p. 269.

Head large; snout twice as long as the greatest orbital diameter; toes nearly half webbed .... 4. *australis*, p. 269.

Head moderate; snout not twice as long as the greatest orbital diameter; toes half webbed .... 5. *alboguttatus*, p. 270.

2. Two metatarsal tubercles, the inner small, but little larger than the outer.

Tympanum close to the eye .... 6. *inermis*, p. 271.

1. **Chiroleptes platycephalus.** (Plate XVII. fig. 4.)

Chiroleptes platycephalus, *Günth. Ann. & Mag. N. H.* (4) xi. p. 350.

Tongue subcircular, entire. Vomerine teeth in two groups between the choanæ. Head large; snout rounded, nearly twice as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space broader than the upper eyelid; tympanum indistinct, three fourths the diameter of the eye. Fingers moderate, first much longer than second; toes short, entirely webbed; subarticular tubercles very small; inner metatarsal tubercle strong, shovel-like; a flat, rather indistinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. A few small tubercles on the back; belly minutely granular. Uniform greenish olive above; throat with a few small greenish spots.

Fort Bourke, Australia.

a. ♀. Fort Bourke. Sydney Mus. (Type.)

2. Chiroleptes brevipalmatus. (PLATE XVII. fig. 5.)

Chiroleptes brevipalmatus, *Günth. Journ. Mus. Godeffr.* xii. 1876, p. 47.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two straight series between the choanæ. Head moderate; snout rounded, not much longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers moderate, first much longer than second; toes short, hardly one-third webbed; subarticular tubercles well developed; inner metatarsal tubercle oval, compressed, shovel-like; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. Skin minutely granular above and beneath. Brownish olive above, with symmetrical brown markings, one of which is a large interocular spot; a dark streak from the tip of the snout through the eye and over the tympanum to the shoulder; a white vertebral line; hinder side of thighs not coloured. Male with a subgular vocal sac.

Australia.

a. ♂.	Fort Denison, Cape York.		Types.
b. ♀.	Gayndah.	Godeffroy Mus.	
c. ♀.	Peak Downs.	Godeffroy Mus.	

3. Chiroleptes brevipes.

Chiroleptes brevipes, *Peters, Mon. Berl. Ac.* 1871, p. 648.

Tongue elliptic, slightly nicked behind. Vomerine teeth in two oblique series between the choanæ. Head as long as broad; nostril a little nearer the tip of the snout than the eye; tympanum distinct, two thirds the diameter of the eye. Toes not half webbed; subarticular tubercles of fingers much stronger than of toes; a large, shovel-like, inner metatarsal tubercle; no outer tubercle. The hind limb being carried forwards along the body, the metatarsal tubercle reaches the nostril. Skin granular on the back and belly. Reddish brown above, spotted and marbled with black; a triangular black spot between the eyes; a black streak from the tip of the snout through the eye and over the tympanum to the shoulder; a white vertebral line; hinder side of thighs black.

Fort Bowen, Australia.

4. Chiroleptes australis.

Chiroleptes australis, *Günth. Cat.* p. 34.
Alytes australis, *Gray, Zool. Misc.* p. 56.
Phractops alutaceus, *Peters, Mon. Berl. Ac.* 1867, p. 30.
Cyclorana novæ hollandiæ, *Steindachn. Novara, Amph.* p. 29, pl. 2. f. 7–10.
Chiroleptes australis, *Günth. Zool. Rec.* iv. p. 145.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two strong, slightly oblique series between the choanæ. Head large; snout rounded, twice, or nearly twice, as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space grooved, as broad as the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Fingers short, first much longer than second; toes short, nearly half webbed; subarticular tubercles well developed; a large, oval, compressed, inner metatarsal tubercle. The hind limb variable in length; being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum, the eye, or between the eye and the nostril. Skin smooth or shagreened above, with a few scattered flat warts, minutely granular beneath; a more or less distinct glandular lateral fold. Brown or olive above, uniform or marbled with darker; a dark streak from the tip of the snout through the eye and over the tympanum to the shoulder; throat spotted with brown. Male with a subgular vocal sac.

Australia.

a–b. ♀ & yg.	Port Essington.	Mr. Gilbert's Coll. (Types.)
c. ♀.	Port Denison, N. Australia.	G. Krefft, Esq.
d, e. Hgr.	Port Denison, N. Australia.	
f, g, h. ♀, ♂, & yg.	Rockhampton, N. Australia.	
i. ♀.	Nicol Bay, N.W.C. Australia.	M. Du Boulay.
k. ♀.	Queensland.	Prof. A. M. Thomson [P.].
l. Skel., ♀.	Australia.	G. Krefft, Esq.

5. **Chiroleptes alboguttatus.** (Plate XVIII. fig. 1.)

Chiroleptes alboguttatus, *Günth. Ann. & Mag. N. H.* (3) xx. p. 54.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two straight or slightly oblique series between the choanæ. Head moderate; snout subacuminate, not quite once and a half as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space not quite as broad as the upper eyelid; tympanum very distinct, at least two thirds the diameter of the eye. Fingers moderate, first much longer than second; toes moderate, half webbed; subarticular tubercles moderate; inner metatarsal tubercle oval, compressed; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or the nostril. Skin smooth above, or with small warts on the back; a glandular lateral fold; belly minutely granular. Olive or brown above, indistinctly marbled with black; a light vertebral line; sides of the body and of the thighs blackish, with numerous round white spots; a dark streak from the tip of the snout through the eye and over the tympanum to the shoulders; throat and breast sometimes marbled with brown. Male with a subgular vocal sac, and blackish rugosities on the inner side of the first digit during the breeding-season.

Australia.

a–b, c–d. ♀.	Port Denison, Cape York.	(Types.)
e. ♂.	Port Denison, Cape York.	G. Krefft, Esq.
f. ♂.	? Clarence River.	G. Krefft, Esq.

6. Chiroleptes inermis.

Chiroleptes inermis, *Peters, Mon. Berl. Ac.* 1867, p. 30.

Vomerine teeth in two small groups between the inner front edges of the choanæ. Snout rounded; tympanum distinct, two thirds the diameter of the eye, separated from the latter by a very narrow interspace. Two metatarsal tubercles, the inner small, but little larger than the outer. Upper surfaces with small scattered tubercles; belly minutely granular. Greyish brown above, with irregular dark spots; lips spotted; hinder side of thighs black- and white-spotted or marbled.

Rockhampton, N.E. Australia.

24. HELEIOPORUS.

Heleioporus, *Gray, Grey's Journ. W. Austral.* p. 447; *Günth. Cat.* p. 39; *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. 1866, p. 94.

Neobatrachus, *Peters, Mon. Berl. Ac.* 1863, p. 234; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 94.

Perialia, sp., *Gray, Eyre's Journ. Exped. Centr. Austral.* p. 407.

Pupil erect. Tongue subcircular, slightly nicked behind. Vomerine teeth. Tympanum concealed. Fingers free; toes more or less webbed, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum a semi-ossified plate. Sacral vertebra slightly dilated. Terminal phalanges simple.

Australia.

1. Heleioporus albopunctatus.

Heleioporus albo-punctatus, *Günth. Cat.* p. 39.

Heleioporus albo-punctatus, *Gray, Grey's Journ. W. Austr.* p. 447, pl. 1. f. 2; *Keferst. Arch. f. Naturg.* 1868, p. 269, pl. 5. f. 2–5.

Perialia eyrei, *Gray, Eyre's Journ. Exped. C. Austr.* i. p. 407, pl. 2. f. 3.

Vomerine teeth in a transverse interrupted series between the choanæ. Habit very stout. Snout rounded, without canthus rostralis; nostril equally distant from the eye and the tip of the snout; interorbital space narrower than the upper eyelid. Fingers blunt; first longer than second; toes short, blunt, hardly half webbed; subarticular tubercles, especially those of the fingers, well developed; inner metatarsal tubercle large, shovel-shaped. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Skin smooth, shagreened on the head and back; a large parotoid, not conspicuous externally. Brownish with white rounded spots, or reddish-white marbled with brown; young, above olive with more or less conspicuous brown spots, and a dark streak from the tip of the snout to the eye. Male without vocal sac, with a conical tubercle on the inner side of the first finger.

Australia.

a. ♀.	Sydney.	G. Krefft, Esq. [P.].
b. ♀.	Swan River.	Mr. Gilbert.
c. ♂.	W. Australia.	(Type of *H. albo-punctatus.*)
d–g. Yg.	W. Australia.	(Types of *Perialia eyrei.*)
h. ♀.	N.W. Australia.	
i, k. ♀.	Port Essington.	Dr. Fleming [P.].

2. Heleioporus pictus.

Neobatrachus pictus, *Peters, Mon. Berl. Ac.* 1863, p. 235.

Toes two-thirds webbed. Skin of head and back with irregular flat warts; parotoids none. Olive above, marbled with darker; a dark streak from the tip of the snout to the eye; a light vertebral line; metatarsal shovel black. Otherwise as in *H. albopunctatus*.

Australia.

a. ♀.	Sandhurst, Victoria.	Col. Beddome [P.].
b. Hgr.	Ryalstone, N. S. Wales.	G. Krefft, Esq. [P.].

The type specimen of the following genus is unfortunately entirely decayed. That it was a Cystignathid there is no doubt, but beyond that it is not possible to say what were its affinities:—

Alsodes, Bell, Zool. Beagle, Rept. p. 41; Günth. Cat. p. 42.

"Head convex, crown smooth. Tongue acutely produced in front, rounded and free behind. Palatine teeth in two small close patches between the interior nostrils. Fingers four, short, webbed at the base (inner toe broad, fringed). Toes webbed to the third phalange." (*Bell.*) "Tympanum, cavum tympanicum, tuba eustachii, wanting; diapophysis of sacral vertebra appears to be a little dilated towards the end." (*Günther.*)

A. monticola, Bell, *l. c.* pl. 18. f. 3.—Island of Inchy, Chonos Archipelago.

The following genus evidently also belongs to this family, but the sternal apparatus not being known it is impossible to refer it to its proper place, though it appears to be most closely related to *Edalorhina*:—

Nattereria, Steindachn. Verh. zool.-bot. Ges. Wien, 1864, p. 279.

"Body elongate, raniform; head triangular, the forehead and vertex flat; tongue large, oblong, thick, slightly emarginate behind, free in its posterior half. Maxillary teeth; palatine teeth none; parotoids strong, produced much beyond the tympanum; latter hardly distinct; openings of the eustachian tubes round, perfectly distinct. Fingers and toes free; two metatarsal tubercles, moderately developed. Diapophyses of sacral vertebra dilated, flat."

N. lateristriga, Steind. l. c. pl. 14. f. 2.—Brazil.

6. DENDROPHRYNISCIDÆ.

Dendrophryniscidæ, *Espada, Jorn. Sc. Lisb.* iii. 1870, p. 65.
Batrachophrynidæ, *Cope, Check-list N.-Amer. Batr. & Rept., Bull. U.S. Nat. Mus.* i. 1877.

Maxillary teeth none. Diapophyses of sacral vertebra not dilated.

This family is closely related to the preceding one, from which it differs only in the absence of maxillary teeth.

1. BATRACHOPHRYNUS.

Batrachophrynus, *Peters, Mon. Berl. Ac.* 1873, p. 411.

Pupil erect. Tongue large, circular, entirely adherent. Vomerine teeth none. No tympanum nor eustachian tubes. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. A cartilaginous omosternum; sternum a cartilaginous plate. Terminal phalanges simple.

Peru.

1. Batrachophrynus brachydactylus.

Batrachophrynus brachydactylus, *Peters, l. c.* p. 413, pl. 3. f. 4.

Head small, much depressed; snout short, rounded, without canthus rostralis; eyes obliquely directed upwards; upper eyelids narrow. Fingers rather short, first and second equal; toes moderately long, two-thirds webbed; subarticular tubercles of fingers and toes very small: two small, scarcely prominent metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the tip of the snout in males, the eye in females. Skin perfectly smooth. Olive above, spotted with darker. Male without vocal sac.

Peru.

a-d. ♂ ♀.	High Peru.	Prof. Taczanowski [P.].

2. Batrachophrynus macrostomus.

Batrachophrynus macrostomus, *Peters, l. c.* p. 412, pl. 2. f. 1.

Differs from the preceding species in the larger head, longer anterior limbs (extended backwards, they reach beyond the body), the absence of an outer metatarsal tubercle, the completely webbed toes, and larger size.

Peru.

2. DENDROPHRYNISCUS.

Dendrophryniscus, *Espada, Jorn. Sc. Lisb.* iii. p. 65.

Pupil ——? Tongue oblong, entire, free behind. Vomerine teeth none. Tympanum hidden. Fingers and toes webbed at the base, the tips dilated. No omosternum; sternum with a bony style.

Brazil.

1. Dendrophryniscus brevipollicatus.

Dendrophryniscus brevipollicatus, *Espada, l. c., and Viaj. Pacif., Vert.* pl. 6. f. 3.

Head depressed, triangular; snout produced, truncate. First finger rudimentary. Skin minutely tubercular. Reddish brown above; limbs with dark cross bands; beneath light brown, belly whitish.

Rio Janeiro.

7. BUFONIDÆ.

Brachycephalidæ, part., Engystomatidæ, part., Bufonidæ, part., Rhinophrynidæ, *Günther, Cat. Batr. Sal.*

Rhinophrynidæ, part., Brachymeridæ, part., Bufonidæ, *Cope, Nat. Hist. Rev.* 1865.

Rhinophrynidæ, Phryniscidæ, part., Bufonidæ, part., Engystomidæ, part., *Mivart, Proc. Zool. Soc.* 1869.

Rhinophrynidæ and Bufonidæ, *Cope, Check-list N.-Amer. Batr. & Rept., Bull. U.S. Nat. Mus.* i. 1877.

Maxillary teeth none; diapophyses of sacral vertebra dilated.

The first two genera of this family approach the *Cystignathidæ*—*Engystomops* resembling *Paludicola*, and *Pseudophryne* resembling *Crinia*; whilst the last two, viz. *Myobatrachus* and *Rhinophrynus*, approach the *Engystomatidæ*.

The omosternum is generally absent; if present, it is reduced to a narrow cartilage. The sternum is usually a cartilaginous plate, which in a few cases is ossified along its centre; in *Engystomops* there is a well-defined bony style supporting a cartilaginous disk.

The vertebræ are procœlian and without ribs. The diapophyses of the sacral vertebra are more or less dilated, but never to such a degree as in the *Pelobatidæ*. The coccyx is attached to two condyles.

A fronto-parietal fontanelle is present in *Engystomops*, *Pseudophryne*, and a few species of *Bufo*; and in a few other species of the latter genus the derm is completely involved in the cranial ossification.

In two genera the pupil is erect.

The distal phalanges are simply obtuse, or T-shaped.

The *Bufonidæ* include terrestrial, burrowing, thoroughly aquatic (*Nectes*), and apparently arboreal (*Nectophryne*) types; *Rhinophrynus* is a true ant-eater, as are several forms of *Engystomatidæ*.

Synopsis of the Genera.

Fingers free, toes nearly free; sternum with a well-ossified style.	1. **Engystomops**, p. 275.
Fingers and toes free; sternum a weak cartilage.	2. **Pseudophryne**, p. 277.
Fingers and toes more or less webbed, the tips dilated into regular disks; sternum cartilaginous	3. **Nectophryne**, p. 279.
Fingers free, toes more or less webbed; sternum either cartilaginous, or with a semiossified style........	4. **Bufo**, p. 281.
Fingers free, toes very broadly webbed; nostrils directed upwards.	5. **Nectes**, p. 327.
Vomerine teeth; a dermal ridge between the choanæ; sternum rudimentary....................	6. **Notaden**, p. 328.
Pupil erect; fingers and toes free; sternum ossified on the median line	7. **Myobatrachus**, p. 328.
Pupil erect; tongue free in front; sternum rudimentary.	8. **Rhinophrynus**, p. 329.

1. ENGYSTOMOPS.

Paludicola, (*non Wagler*) *Cope, Proc. Ac. Philad.* 1864, p. 180.
Engystomops, *Espada, An. Soc. Esp.* i. 1872, p. 86.
Microphryne, *Peters, Mon. Berl. Ac.* 1873, p. 616.
Peralaimos, *Espada, Viaj. Pacif., Vert.* p. 163.

Pupil horizontal. Tongue elliptic, entire and free behind. Vomerine teeth none. Tympanum distinct or hidden. Fingers free, toes nearly free, the tips simply swollen. Outer metatarsals united. A cartilaginous omosternum; sternum with a bony style. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple or anchor-shaped.

Tropical America.

Synopsis of the Species.

Tympanum hidden; tibio-tarsal articulation not reaching the eye	1. *pustulosus*, p. 275.
Tympanum more or less distinct; tibio-tarsal articulation reaching the eye............	2. *stentor*, p. 276.
Tympanum very distinct, half the width of the eye; distal phalanges anchor-shaped ..	3. *petersii*, p. 276.

1. Engystomops pustulosus.

Paludicola pustulosa, *Cope, Proc. Ac. Philad.* 1864, p. 180.
Microphryne pustulosa, *Cope, Journ. Ac. Philad.* (n. s.) viii. p. 155.

Head small; snout prominent; interorbital space not quite so broad as the upper eyelid; tympanum hidden. Fingers slender, first not extending beyond second; toes moderate, quite free; tips of fingers and toes slightly swollen; subarticular tubercles very prominent; two small metatarsal tubercles; a conical tubercle on the middle of the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in the middle between the shoulder and the eye. Upper surfaces covered with very prominent warts; parotoids none; lower surfaces smooth, except under the thighs. Greyish olive above, with darker markings; limbs cross-barred; belly spotted with blackish; throat and breast greyish, with a light median line. (Male with a large subgular vocal sac.)

C. America; Colombia.

a. ♀.	Tehuantepec.	Brussels Museum [E.].

2. Engystomops stentor.

Bufo stentor, *Espada, An. Soc. Esp.* i. p. 84.
? Bufo (Microphryne) pustulosus, *Peters, Mon. Berl. Ac.* 1873, p. 616.
Peralaimos stentor, *Espada, Viaj. Pacif., Vert.* p. 163, pl. 2. f. 4.

Head small; snout prominent; interorbital space as broad as the upper eyelid; tympanum more or less distinct, three fourths the width of the eye. Fingers slender, first extending beyond second; toes slender, with a rudiment of web; tips of fingers and toes swollen; subarticular tubercles very prominent; two small metatarsal tubercles; a conical tubercle on the middle of the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Upper surfaces covered with small warts; a flat, more or less indistinct parotoid; lower surfaces smooth, except under the thighs. Blackish brown above, the warts lighter; a few brown bands across the limbs; belly and lower surface of limbs largely marbled with blackish brown; throat and chest brown, with a light median line. Male with a large subgular vocal sac.

C. America; Colombia; Ecuador.

a, b. ♂.	Sarayacu, Ecuador.	Mr. Buckley [C.].
c. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].

3. Engystomops petersii.

Engystomops petersi, *Espada, An. Soc. Esp.* i. p. 86, *and Viaj. Pacif., Vert.* p. 160, pl. 2. f. 3.

Head very small; snout prominent; tympanum very distinct, half the width of the eye. Fingers slender, first not extending beyond second; toes slender, with a rudiment of web; tips of fingers and toes swollen; subarticular tubercles very prominent; two small metatarsal tubercles; a conical tubercle on the middle of the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the anterior angle of the eye. Upper surfaces with smooth flat warts; a flat parotoid. Terminal phalanges anchor-shaped.

E. Ecuador.

2. PSEUDOPHRYNE.

Pseudophryne, *Fitzing. Syst. Rept.* i. p. 32; *Günth. Cat.* p. 45; *Cope, Nat. Hist. Rev.* 1865, p. 103.
Phryniscus, sp., *Dum. & Bibr.* viii. p. 722.

Pupil horizontal. Tongue elliptical, entire and free behind. Vomerine teeth none. No tympanum. Fingers and toes free, the tips not dilated. Outer metatarsals united. No omosternum; sternum cartilaginous. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

Australia.

Synopsis of the Species.

I. One or two small rounded metatarsal tubercles; tip of longest toe reaching beyond the eye.
  Blackish brown above; forehead yellowish. 1. *australis*, p. 277.
  Brown or olive above, variegated with darker .... 2. *bibronii*, p. 278.
  Yellowish brown above; sides blackish .. 3. *coriacea*, p. 278.
II. Two large, oval, compressed metatarsal tubercles; tip of longest toe not reaching beyond the eye....................... 4. *guentheri*, p. 279.

1. Pseudophryne australis.

Pseudophryne australis, *Günth. Cat.* p. 45.
Bombinator australis, *Gray, Proc. Zool. Soc.* 1835, p. 57; *Eyre, Journ. Exped. C. Austr.* i. *App.* p. 407, pl. 1. f. 1.
Phryniscus albifrons, *Dum. & Bibr.* ix. p. 413, pl. 100. f. 3.
Pseudophryne australis, *Keferst. Arch. f. Naturg.* 1868, p. 271.

Snout rounded, a little longer than the orbital diameter, without canthus rostralis; interorbital space as broad as the upper eyelid. Fingers short, first much shorter than second; toes short, quite free, without even a rudiment of fringe; subarticular tubercles not very prominent; a small, not very prominent, rounded inner metatarsal tubercle; outer tubercle none or very indistinct. The hind limb being carried forwards along the body, the tip of the longest toe always reaches beyond the eye; the tibio-tarsal articulation reaches the shoulder in the male, not so far in the female. Skin smooth, or with very small, round, flat warts on the back. Blackish brown above; forehead and crown, a streak along the coccyx, a spot on the upper arm, and another on the thigh yellowish; beneath blackish, with large yellowish spots. Male with an internal subgular vocal sac, and a flat oval gland on the hinder side of each thigh.

Australia.

a. ♂.	Swan River.	J. Wright, Esq. [P.] (Type).
b, c. ♀.	Sydney.	
d. ♂.	Australia.	G. Krefft, Esq. [P.].
e. ♀.	Australia.	

2. Pseudophryne bibronii.

Pseudophryne bibronii, *Günth. Cat.* p. 46.
Phryniscus australis, *Dum. & Bibr.* viii. p. 725, pl. 100. f. 2 & 4.
Pseudophryne bibronii, *Steindachn. Novara, Amph.* p. 34, pl. 5. f. 1 & 2; *Keferst. Arch. f. Naturg.* 1868, p. 271.

Two small metatarsal tubercles. Upper surfaces with small warts. Brown or olive above, variegated with darker; generally a more or less distinct pink vertebral line, and a yellowish spot on the upper arm; a light line, or two large yellowish spots, on the hinder side of the thighs; beneath marbled with brown and yellowish. A flat oval gland on the hinder side of each thigh is generally, though not always, present in the male. Otherwise as in *P. australis.*

Australia.

a. ♀.	Cape York.	Hr. Dämel [C.].
b. ♀.	Gayndah.	Godeffroy Mus.
c–d. ♀.	Brisbane.	G. Krefft, Esq. [P.].
e–i. ♂ ♀.	Clarence River.	G. Krefft, Esq. [P.].
k. Many spec., ♂ ♀.	Sandhurst, Victoria.	Col. Beddome [C.].
l. Many spec., ♂ ♀.	Queensland.	G. Krefft, Esq. [P.].

(Two of the specimens bear larvæ of the Dipterous insect *Batrachomyia. Cf.* Krefft, Trans. Entom. Soc. N. S. Wales, i. 1864, p. 100.)

m–n. ♂.	Sydney.	
o. ♂.	Sydney.	Mr. W. G. Cutter [P.].

3. Pseudophryne coriacea.

Pseudophryne, sp. n., *Krefft, Monthly Notic. Roy. Soc. Tasman.* 1865, p. 17.
—— coriacea, *Keferst. Arch. f. Naturg.* 1868, p. 272, pl. 6. f. 15.

Two small metatarsal tubercles, the outer sometimes very indistinct. Skin nearly smooth above, strongly glandular on the sides. Yellowish brown above; sides of head and body blackish, the two colours sharply defined; lower surfaces black- and yellowish-marbled. No gland on the hinder side of the thigh.

E. Australia.

a–b. ♂ ♀.	Lake Macquarie.	G. Krefft, Esq. [P.].

This form, as well as *P. bibronii,* may prove to be mere varieties of *P. australis.*

4. **Pseudophryne guentheri.** (Plate XVIII. fig. 2.)

Pseudophryne bibronii, part., *Günth. Cat.* p. 137.

Differs from the preceding in the following points:—Metatarsal tubercles two, large, oval, compressed. Hind limb very short, the tip of the longest toe not reaching beyond the anterior corner of the eye. Upper surfaces with prominent smooth warts, some of which are confluent into straight or curved lines on the back. Brown or olive above; forehead and a few large markings on the back lighter. Beneath whitish, immaculate, slightly spotted or delicately marbled with brown. Male with a very large flat, oval, lumbar gland, and a rather indistinct large subcircular parotoid.

Australia.

a. ♂.	Swan River.	Sir A. Smith [P.].
b. ♀.	N.W. Australia.	
c, d. ♀.	Australia.	

3. NECTOPHRYNE.

Nectophryne, *Buchh. & Peters, Mon. Berl. Ac.* 1875, p. 202.
Pedostibes, *Günth. Proc. Zool. Soc.* 1875, p. 576.

Pupil horizontal. Tongue elliptical, entire, free behind. Palate smooth. Tympanum distinct or absent. Fingers and toes webbed, the tips dilated into regular disks. Outer metatarsals united. No omosternum; sternum cartilaginous. Diapophyses of sacral vertebra strongly dilated. Terminal phalanges T-shaped.

West Africa; East Indies.

Synopsis of the Species.

Fingers entirely webbed	1. *afra*, p. 279.
Fingers one-third webbed; tympanum two thirds the width of the eye............	2. *guentheri*, p. 280.
Fingers webbed at the base; tympanum one third the width of the eye	3. *tuberculosa*, p. 280.
Fingers webbed at the base; no metatarsal tubercles	4. *sundana*, p. 281.

1. **Nectophryne afra.**

Nectophryne afra, *Buchh. & Peters, l. c.* pl. 2. f. 5.

Snout short, projecting, truncate; canthus rostralis rounded; loreal region sloping obliquely inwards and downwards; no tympanum. First finger shorter than second; fingers and toes webbed to the tips, which are swollen; two flat metatarsal tubercles. Upper surfaces with scattered small tubercles; belly and inferior surface of thighs granulate. Olive-green; a cross band between the eyes and on the sacral region; between these a large irregular spot; limbs with dark spots.

Cameroons, W. Africa.

2. **Nectophryne guentheri.** (Plate XVIII. fig. 3.)

Bufo leptopus, juv., *Günth. Proc. Zool. Soc.* 1872, p. 598.

Habit slender. Head small; snout obliquely truncate; loreal region vertical; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the width of the eye. Fore limb very slender, as long as the distance between vent and tympanum. Fingers moderate, much depressed, one-third webbed, the web extending as a margin to their tips, which are broad and truncated; first finger half the length of the second; toes rather short, the web extending to their tips, but deeply emarginate; the tips like those of the fingers; two small, flat, metatarsal tubercles; no tarsal fold; subarticular tubercles of fingers and toes small. The hind limb being carried forwards along the body, the metatarsal tubercle marks the tip of the snout. Skin covered with small tubercles. Olive-brown above, minutely spotted with blackish; lower surfaces yellowish, the throat and belly spotted with greyish brown.

Borneo.

a. Hgr.	Matang.	(Type of *Bufo leptopus*, juv.)

3. **Nectophryne tuberculosa.**

Pedostibes tuberculosus, *Günth. Proc. Zool. Soc.* 1875, p. 576, pl. 64. f. C.

Habit moderately slender. Head moderate; snout subacuminate; loreal region vertical; interorbital space as broad as the upper eyelid; tympanum distinct, one third the width of the eye. Fingers moderate, depressed, webbed at the base, first half the length of second; toes moderate, nearly entirely webbed; tips of fingers and toes dilated into broad truncated disks, those of toes rather smaller than those of fingers; subarticular tubercles small; two small, flat, metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the metatarsal tubercle reaches between the eye and the tip of the snout. Skin of the upper parts tubercular, the largest tubercles being arranged along each side of the back. Brownish-grey above, sides darker; a white band from below the eye to the axil; another white longitudinal band in the lumbar region; beneath dark-spotted. Male with a subgular vocal sac.

Malabar.

a–b. ♂.	Malabar.	Col. Beddome [C.].	(Types.)

4. Nectophryne ? sundana.

Calohyla sundana, *Peters, Mon. Berl. Ac.* 1867, p. 35.

Fingers webbed at the base, the tips dilated into broad truncated disks; toes webbed to the base of last phalange; no metatarsal tubercles. Body with scattered small tubercles; belly granulate. Uniform brown, above indistinctly spotted with black, beneath spotted with white.

Borneo.

4. BUFO *.

Bufo, sp., *Laur. Syn. Rept.* p. 25.
Bufo, *Wagl. Syst. Amph.* p. 206: *Tschudi, Batr.* p. 88: *Dum. & Bibr.* viii. p. 662: *Günth. Cat.* p. 55: *Cope, Nat. Hist. Rev.* 1865, p. 102.
Oxyrhynchus, *Spix, Spec. Nov. Test. Ran.* p. 49: *Espada, Viaj. Pacif., Vert.* p. 170.
Otilophus, *Cuv. R. A.*: *Tschudi, Batr.* p. 89; *Günth. Cat.* p. 69: *Cope, l. c.*
Hylaplesia, sp., *Boie, Isis*, 1827, p. 294.
Chaunus, sp., *Wagl. Isis*, 1828, p. 744.
Phryne, (*Oken*) *Fitzing. Syst. Rept.* i. p. 32.
Chilophryne, *Fitzing. l. c.*; *Cope, Proc. Ac. Philad.* 1862, p. 357.
Phrynoidis, *Fitzing. l. c.*: *Cope, l. c., and Nat. Hist. Rev.* 1865, p. 102.
Peltaphryne, *Fitzing. l. c.*; *Cope, ll. cc.*
Anaxyrus, *Tschudi, Faun. Per., Herp.* p. 78.
Schismaderma, *Smith, Ill. S. Afr., Rept., App.* p. 28; *Günth. l. c.* p. 138: *Cope, l. c.*
Adenomus, *Cope, Proc. Ac. Philad.* 1860, p. 371.
Rhæbo, *Cope, eod. loc.* 1862, p. 357, *and Nat. Hist. Rev.* 1865, p. 102.
Epidalea, *Cope, Nat. Hist. Rev.* 1865, p. 102.
Otaspis, *Cope, Proc. Ac. Philad.* 1868, p. 312.
Scutiger, *Theobald, Cat. Rept. As. Soc. Mus.* 1868, p. 83.
Nannophryne, *Günth. Proc. Zool. Soc.* 1870, p. 402.
Ansonia, *Stoliczka, Proc. As. Soc.* 1870, p. 152.

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* 1. *Bufo horribilis*, Wiegm. Isis, 1833, p. 654; Peters, Mon. Berl. Ac. 1863, p. 81.—Mexico.
2. *Bufo cristatus*, Wiegm. l. c. p. 660: Peters, l. c.—Mexico.
3. *Bufo marmoratus*, Wiegm. l. c. p. 661: Peters, l. c.—Mexico.
4. *Bufo erythronotus*, Holbr. N.-Amer. Herp. v. pl. 2.—U. States.
5. *Bufo punctatus*, Baird & Gir. Proc. Ac. Philad. 1852, p. 173.—Rio Grande des Norte.
6. *Bufo alvarius*, Girard, U.S. Mex. Bound. Surv. ii., Rept. p. 26, pl. 41. f. 1–6.—Valley of Gila and Colorado.
7. *Bufo melanogaster*, Hallow. Proc. Ac. Philad. 1860, p. 480.—Nicaragua.
8. *Bufo stomaticus*, Lütk. Vidensk. Meddel. 1862, p. 305.
9. *Bufo microscaphus*, Cope, Proc. Ac. Philad. 1866, p. 301.—Colorado.
10. *Bufo funereus*, Bocage, Jorn. Sc. Lisb. 1866, p. 77.—Duque de Bragance, Angola.
11. [illegible]
12. *Ollotis cærulescens*, Cope, Journ. Ac. Philad. (n. s.) viii. part 2, p. 98, pl. 23. f. 3.—Costa Rica.
13. *Bufo pictus*, Cope, in Yarrow's Rep. p. 522, pl. 25. f. 4, 5.

Cranopsis, *Cope, Journ. Ac. Philad.* (n. s.) viii. part 2, 1876, p. 96.
Crepidius, *Cope, l. c.* p. 97.
Ollotis, *Cope, l. c.* p. 98.
Dromoplectrus, *Camerano, Atti Acc. Tor.* xiv. 1879, p. 882.

Pupil horizontal. Tongue elliptic or pyriform, entire and free behind. Vomerine teeth none. Tympanum distinct or hidden, seldom absent. Fingers free; toes more or less webbed, the tips simple or dilated into small disks. Outer metatarsals united. Omosternum generally missing; if present, cartilaginous; sternum a cartilaginous plate, sometimes more or less ossified along the median line. Diapophyses of sacral vertebra more or less dilated. Terminal phalanges obtuse or triangular.

Cosmopolitan, except Australia.

Synopsis of the Species.

I. OLD-WORLD SPECIES.

A. Crown without bony ridges.

1. First finger shorter than second.

a. Toes half webbed.

Two small parotoids on each side...... 1. *borbonicus*, p. 286.
No metatarsal tubercles .... 2. *brevipes*, p. 287.
Parotoids none .... 4. *penangensis*, p. 287.

b. Toes more than half webbed.

Parotoids none .... 5. *pulcher*, p. 288.
Parotoids narrow, elongate .... 6. *kelaartii*, p. 288.

2. First finger as long as or longer than second.

a. Parotoids none or indistinct.

Habit slender; tarso-metatarsal articulation reaching far beyond the tip of the snout .... 3. *leptopus*, p. 287.
Tympanum as large as the eye........ 31. *carens*, p. 301.
Canthus rostralis indistinct; tympanum much smaller than the eye .... 32. *blanfordii*, p. 301.

b. Parotoids distinct.

α. Tympanum as large as the eye, or nearly as large.

No tarsal fold; skin smooth.......... 7. *hololius*, p. 289.
A tarsal fold .... 27. *regularis*, p. 298.

β. Tympanum smaller than the eye.

* Toes not half webbed.

Tympanum rather indistinct; a tarsal

fold; subarticular tubercles of toes double † .... 19. *calamita*, p. 293.

Tympanum very distinct, half the width of the eye; a tarsal fold; subarticular tubercles of toes simple............ 20. *raddii*, p. 294.

Tympanum distinct, one fourth the width of the eye; a tarsal fold .... 22. *sumatranus*, p. 295.

Tympanum distinct, one third the width of the eye; belly almost entirely smooth 29. *angusticeps*, p. 300.

Tympanum distinct; no tarsal fold; skin remarkably rough .... 37. *tuberosus*, p. 304.

Tympanum hidden; no tarsal fold .... 38. *taitanus*, p. 305.

** Toes at least half webbed.

No tarsal fold; subarticular tubercles of toes simple; snout projecting ...... 8. *beddomii*, p. 289.

A tarsal fold; subarticular tubercles of toes double .... 21. *latastii*, p. 295.

A tarsal fold; subarticular tubercles of toes simple .... 25. *viridis*, p. 297.

A tarsal fold; subarticular tubercles of toes double; first finger considerably longer than second................ 26. *mauritanicus*, p. 298.

No tarsal fold; subarticular tubercles of toes simple..................... 28. *benguelensis*, p. 299.

No tarsal fold; subarticular tubercles of toes simple; a fold across the occipital region......................... 30. *olivaceus*, p. 300.

No tarsal fold; subarticular tubercles of toes double..................... 36. *vulgaris*, p. 303.

γ. Tympanum hidden ...... 39. *sikkimensis*, p. 305.

B. Crown with bony ridges.

1. No parietal ridges.

a. Orbito-tympanic ridges not much developed.

Cranial ridges rather indistinct; tympanum very small .... 40. *himalayanus*, p. 305.

Cranial ridges very distinct; tympanum at least two thirds the width of the eye .... 41. *melanostictus*, p. 306.

Cranial ridges very distinct; tympanum very small .... 42. *microtympanum*, [p. 307.

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† Most of them; these tubercles are never all double. By "tubercles double" I mean that at least those under the last phalanges of the fourth toe are thus disposed.

b. Orbito-tympanic ridges much developed, swollen.

Toes entirely webbed .... 51. *asper*, p. 313.
Toes not quite half webbed .... 52. *celebensis*, p. 313.
Orbito-tympanic ridge confluent with the parotoid .... 53. *galeatus*, p. 314.

2. A parietal ridge.

a. Supero-orbital and parietal ridges forming together a straight or nearly straight line.

Tympanum as large as the eye .... 47. *biporcatus*, p. 311.
Tympanum hardly two thirds the width of the eye; parietal ridges much swollen .... 48. *claviger*, p. 311.

b. Supero-orbital and parietal ridges forming together an angle.

Tympanum two thirds the width of the eye; tarso-metatarsal articulation reaching beyond the tip of the snout . 49. *divergens*, p. 312.
Tympanum two thirds the width of the eye; tarso-metatarsal articulation not reaching beyond the tip of the snout . 50. *parietalis*, p. 312.
Tympanum very small; first finger shorter than second; second and third equal .... 61. *dialophus*, p. 319.

II. American Species.

A. Cranial ridges none, or indistinct.

1. Toes very slightly webbed.

No tarsal fold; tympanum small ...... 9. *debilis*, p. 289.
A thin tarsal fold; skin smooth; tarso-metatarsal articulation reaching beyond the tip of the snout .... 10. *hæmatiticus*, p. 290.
A rather indistinct tarsal fold; tympanum two thirds the width of the eye; tarso-metatarsal articulation marking the eye .... 11. *guttatus*, p. 290.
A tarsal fold; tympanum hidden ...... 13. *cæruleostictus*, p. 291.

2. Toes one-third or half webbed.

Skin perfectly smooth .... 12. *glaberrimus*, p. 291.
Tympanum scarcely perceptible; a lateral dermal fold .... 14. *diptychus*, p. 292.
Tympanum concealed; lores vertical .. 16. *monksiæ*, p. 292.
Tympanum large, very distinct........ 17. *mexicanus*, p. 293.

Tympanum absent; no tarsal fold; first finger not longer than second	18. *variegatus*, p. 293.
Tympanum distinct, half the width of the eye	23. *halophilus*, p. 295.
Inner metatarsal tubercle very large, shovel-shaped	33. *compactilis*, p. 302.
Tympanum hidden; no tarsal fold; first finger longer than second	34. *simus*, p. 302.
Tympanum distinct, very small; parotoids short	35. *spinulosus*, p. 302.

3. Toes entirely webbed, or nearly so.

Skin perfectly smooth	15. *politus*, p. 292.
Skin warty	24. *boreas*, p. 296.

B. Head with bony ridges.

1. A tympanum.

a. Upper eyelid normal.

α. Supraorbital and postorbital ridges straight, forming together a right angle.

* Derm of head free from cranial ossification.

Parotoids close to the eye; metatarsal tubercles blunt	43. *intermedius*, p. 307.
Parotoids close to the eye; metatarsal tubercles shovel-shaped	44. *dipternus*, p. 308.
Tympanum large, very distinct	45. *lentiginosus*, p. 308.
Tympanum small; toes nearly entirely webbed	46. *occipitalis*, p. 310.
Tympanum hidden	54. *bocourtii*, p. 314.
Tympanum distinct, half the size of the eye; toes extensively webbed	64. *coniferus*, p. 321.

** Derm of head involved in cranial ossification.

Tympanum at least half the width of the eye	74. *peltocephalus*, p. 325.
Temporal region entirely bony, the tympanum being a mere foramen perforating a shield of bone	75. *empusus*, p. 326.

β. Supraorbital and postorbital ridges forming together a more or less regular curve, with the parietal ridges (if present) a ⅄-shaped figure.

* Edge of the upper jaw strongly dilated horizontally	68. *d'orbignyi*, p. 322.
** Angles of jaws projecting.	59. *typhonius*, p. 317.

*** Jaws normal.

† Snout not prominent.

‡ Tympanum more than half the width of the eye, perfectly distinct.

Parotoids narrow, elongate, pointed behind; tarso-metatarsal articulation not reaching the eye .... 55. *arenarum*, p. 314.
Parotoids enormous .... 57. *marinus*, p. 315.
Parotoids moderate, elongate; tarso-metatarsal articulation reaching in front of the eye, or beyond.............. 58. *crucifer*, p. 316.
Parotoids short, round or subtriangular . 62. *valliceps*, p. 319.
Toes nearly free.................... 63. *melanochlorus*, p. 320.
First finger not extending beyond second 69. *sternosignatus*, p. 323.

‡‡ Tympanum less than half the width of the eye, or indistinct.

Tympanum perfectly distinct; a tarsal fold; a lateral dermal fold .... 56. *molitor*, p. 315.
Tympanum distinct in its anterior half; fingers remarkably elongate .... 65. *auritus*, p. 321.
Tympanum hidden; fingers very slender. 66. *veraguensis*, p. 321.
Tympanum distinct, one fifth orbit; toes shortly webbed .... 67. *coccifer*, p. 322.

†† Snout prominent, contracted.

No tarsal fold; interorbital space narrow. 70. *canaliferus*, p. 323.
No tarsal fold; interorbital space slightly broader than the upper eyelid ...... 72. *granulosus*, p. 324.
A tarsal fold; no preorbital ridge...... 71. *argillaceus*, p. 324.
A tarsal fold .... 73. *gutturosus*, p. 324.

b. Upper eyelid produced in a horn-like dermal appendage. 60. *ceratophrys*, p. 319.

2. No tympanum.

Derm of head involved in cranial ossification .... 76. *fastidiosus*, p. 326.
Digits inclosed in the skin, leaving the longest projecting .... 77. *epioticus*, p. 326.

1. Bufo borbonicus.

Bufo cruentatus, *Günth. Cat.* p. 62.
Hylaplesia borbonica, *Boie, Isis*, 1827, p. 294; *Tschudi, Batr.* p. 70; *Peters, Mon. Berl. Ac.* 1863, p. 81, & 1867, p. 34.
Bufo cruentatus, *Tschudi, Batr.* p. 88; *Dum. & Bibr.* p. 62.
—— borbonicus, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 193.

Habit slender. Crown without bony ridges; snout obliquely truncate, with angular canthus rostralis; loreal region vertical; interorbital space broader than the upper eyelid: tympanum small, rather indistinct. Limbs slender; the hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. First finger a little shorter than second; toes half-webbed, with simple subarticular tubercles; tips of fingers and toes swollen into small disks; two small metatarsal tubercles; no tarsal fold. Skin covered with small tubercles; two small parotoids on each side, one on the neck, the other one near the shoulder. Blackish brown above, with white spots; beneath marbled with brown.

Java.

a. Bad state.	Java.

2. **Bufo brevipes.**

Hylaplesia brevipes, *Peters, Mon. Berl. Ac.* 1867, p. 34.

First finger very short. Tips of fingers and toes dilated into well-developed disks. No metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the centre of the eye. Otherwise as in *B. borbonicus.*

Zamboanga.

3. **Bufo leptopus.** (PLATE XVIII. fig. 4.)

Bufo leptopus, part.*, *Günth. Proc. Zool. Soc.* 1872, p. 598.

Habit slender. Crown without bony ridges; head small; snout obliquely truncate, with angular canthus rostralis; loreal region vertical; interorbital space slightly broader than the upper eyelid; tympanum distinct, not quite half the width of the eye. Fore limb slender, as long as the distance between the eye and the vent; fingers slender, first and second equal, the tips swollen into very small disks. Hind limb slender, the tarso-metatarsal articulation reaching far beyond the tip of the snout; toes slightly webbed at the base, the tips dilated into very small disks; subarticular tubercles none; two rather indistinct metatarsal tubercles; no tarsal fold. Skin covered with small warts and tubercles; parotoids none. Brown above, marbled with reddish; throat and chest blackish.

Borneo.

a. ♀.	Matang.	(Type.)
b. ♀.	Matang.	

4. **Bufo penangensis.**

Ansonia penangensis, *Stoliczka, Journ. As. Soc.* 1870, p. 152, pl. 9. f. 4.

Habit slender. Crown without bony ridges; snout short and blunt; tympanum distinct, smaller than the eye; fingers long, first shorter than second; toes short, half webbed; tips of fingers and toes slightly swollen. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. The whole of the upper and lower skin, except on chin and throat, tuberculated; parotoids none. Above uniform ashy, marbled and reticulated with black; sides of head and body, and the limbs, with rather large pale orange or yellowish spots, lower parts dusky with small white spots, especially on the sides of the belly and in front of the shoulders; lower part of belly and the inner thighs of a beautiful rose-colour in living specimens.

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* The adult only.

Pinang.

5. Bufo pulcher.

Ansonia ornata, *Günth. Proc. Zool. Soc.* 1875, p. 568, pl. 63. f. A.

Habit slender. Crown without bony ridges; snout short, obliquely truncate, with angular canthus rostralis and vertical loreal region; interorbital space a little broader than the upper eyelid; tympanum distinct, about half the size of the eye. Fingers rather slender, first much shorter than second; toes short, nearly entirely webbed; subarticular tubercles simple, not very prominent; tips of fingers and toes slightly swollen; metatarsal tubercles two, not very prominent; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Anterior half of the back finely tubercular, the remainder smooth; no parotoids. Black; upperside of the head and a dorsal line generally grey; beneath with large bright yellow spots. Male with a subgular vocal sac.

Brumagherries.

a, b. Many spec., ♂ & hgr.	Brumagherries.	Col. Beddome [C.].	(Types.)

6. Bufo kelaartii.

Bufo kelaartii, *Günth. Cat.* p. 140, pl. x. f. A.
Adenomus badioflavus, *Cope, Proc. Ac. Philad.* 1860, p. 371.
Bufo kelaartii, *Günth. Rept. Brit. Ind.* p. 421.
—— kandianus, *Günth. Ann. & Mag. N. H.* 1872, ix. p. 87.

Crown without bony ridges; snout rounded or slightly pointed in front; canthus rostralis angular; interorbital space as broad as the upper eyelid; tympanum small, rather indistinct. Fingers rather slender, first not extending as far as second; toes entirely webbed, with simple subarticular tubercles; tips of fingers and toes swollen; two small metatarsal tubercles; tarsal fold present or absent. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Skin covered with small tubercles; parotoid very narrow and rather elongate. Brownish above; a light cross band between the eyes; beneath brown-spotted.

Ceylon.

a–b, c, d. ♀ & hgr.	Ceylon.	Sir A. Smith [P.]. Types.
e. Hgr.	Ceylon.	
f. ♀.	Ceylon.	B. H. Barnes, Esq.
g. Hgr.	Ceylon.	Col. Beddome [C.].
h. ♂.	Ceylon.	G. H. K. Thwaites, Esq. [P.]. (Type of *Bufo kandianus.*)
i. Yg.	Ceylon.	G. H. K. Thwaites, Esq. [P.].

7. Bufo hololius.

Bufo hololius, *Günth. Proc. Zool. Soc.* 1875, p. 569, pl. 64. f. A.

Crown without bony ridges; snout short, prominent; interorbital space as broad as the upper eyelid; tympanum very distinct, nearly as large as the eye, close to it. Fingers short, first extending a little beyond second; toes short, webbed at the base only; subarticular tubercles simple, not very prominent; two small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Skin smooth, the back with very flat, smooth, distinctly porous glandular patches; parotoid flat. Olive above, marbled with brown; beneath immaculate.

Malabar.

a. ♀.	Malabar.	Col. Beddome [C.]. (Type.)

8. Bufo beddomii. (Plate XIX. fig. 1.)

Bufo beddomii, *Günth. Proc. Zool. Soc.* 1875, p. 569.
—— travancoricus, *Beddome, Proc. Zool. Soc.* 1877, p. 685.

Crown without bony ridges; snout short, projecting, with angular canthus rostralis; interorbital space a little broader than the upper eyelid; tympanum very small, sometimes indistinct. First finger not extending beyond second; toes nearly entirely webbed, with simple subarticular tubercles; two small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Upper parts covered with rough tubercles; parotoids ovate, about twice as long as broad, rather indistinct. Dark brown above, with indistinct black spots; limbs beautifully marbled with carmine; lower surfaces marbled with brown.

Malabar; Travancore.

a. ♀.	Malabar.	Col. Beddome [C.]. (Type.)
b. ♀.	Malabar.	Col. Beddome [C.].
c. ♀.	Chokam Patty hills, 4000 ft.	Col. Beddome [C.]. (As typical of *Bufo travancoricus.*)

9. Bufo debilis.

Bufo debilis, *Girard, Proc. Ac. Philad.* 1854, p. 87.
—— insidior, *Girard, l. c.* p. 88, *and U.S. Mex. Bound. Surv.* ii. p. 26, pl. 41. f. 13–18.

Crown without bony ridges; snout more or less protruding;

tympanum small. Toes slightly webbed at the base; no tarsal fold. Parotoids elongate. Brownish yellow or bluish slate above, dark-spotted; beneath immaculate.

United States (Chihuahua, Sonora, Lower Rio Grande).

10. Bufo hæmatiticus.

Bufo hæmatiticus, *Cope, Proc. Ac. Philad.* 1862, p. 157; *Keferst. Gött. Nachr.* 1867, p. 353, *and Arch. f. Naturg.* 1868, p. 295, pl. 9. f. 7.
Rhæbo hæmatiticus, *Cope, l. c.* p. 357.

Crown without bony ridges; snout short, obliquely truncated, with angular canthus rostralis; loreal region vertical; interorbital space broader than the upper eyelid; tympanum very distinct, about half the width of the eye. Fingers slender, with slightly swollen tips, first extending beyond second; toes short, webbed at the base, with slightly swollen tips; subarticular tubercles simple, not very prominent; two slightly developed metatarsal tubercles; a thin tarsal fold. Limbs slender. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches beyond the tip of the snout. Skin perfectly smooth everywhere, or with very small tubercles on the upper surfaces; parotoids large, elliptic, angular externally. Brown above; a light line from the tip of the snout along the canthus rostralis, the edge of the eyelid, the parotoid, and the side of the body to the groin; sides of head and body below this line reddish brown; a light spot below and in front of the eye; a few large, symmetrical, light-edged spots on the back; a few transverse, black, light-edged spots on the limbs; brown beneath, marbled with darker.

Colombia; Costa Rica.

a. ♀.	Costa Rica.	
b–c. Hgr.	Costa Rica.	O. Salvin, Esq. [C.].

11. Bufo guttatus.

Bufo leschenaultii, *Günth. Cat.* p. 64.
Bufo guttatus, *Schneid. Hist. Amph.* i. p. 218; *Wiegm. Isis,* 1833, p. 657; *Peters, Mon. Berl. Ac.* 1863, p. 81.
—— leschenaultii, *Tschudi, Batr.* p. 89; *Dum. & Bibr.* p. 666, pl. 91. f. 1.
Rhæbo leschenaultii, *Cope, Proc. Acad. Philad.* 1862, p. 357; *Espada, Viaj. Pacif., Vert.* p. 167.

Crown without bony ridges; snout short, truncated; canthus rostralis angular; loreal region vertical; interorbital space much broader than the upper eyelid; tympanum very distinct, vertically elliptic, about two thirds the width of the eye. Tips of fingers and toes swollen; first finger extending far beyond second; toes slightly webbed at the base, with simple subarticular tubercles; two moderate metatarsal tubercles; a rather indistinct tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Upper surfaces with flat, scarcely prominent warts; parotoids large, depressed, descending to the armpit; lower surfaces nearly smooth. Brown above; greyish brown beneath, with round light spots; lower lip bordered with light spots.

Guiana.

a. ♀ [from snout to vent 177 millim.].	Demerara Falls.
b. Hgr.	Demerara Falls.

12. **Bufo glaberrimus.**

Bufo glaberrimus, *Günth. Proc. Zool. Soc.* 1868, p. 483, pl. 37. f. 2.

Crown without bony ridges; snout short, truncated, with angular canthus rostralis; loreal region vertical; interorbital space as broad as the upper eyelid; tympanum very distinct, about half the width of the eye. First finger extending beyond second; toes nearly half webbed, with simple subarticular tubercles; two slightly developed metatarsal tubercles; an indistinct tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the nostril. Skin perfectly smooth, with a few slight tubercles on the sides of the body; parotoids large, ovate, very prominent. Upper parts brownish black; the sides black; in one specimen a beautiful rose-coloured spot in the groin, and smaller spots of the same colour on the hinder part of the thigh; lower parts blackish, with white dots. Male with a subgular vocal sac.

Colombia; Ecuador.

a. ♂.	Bogota.	(Type.)
b. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].
c. Hgr.	Sarayacu, Ecuador.	Mr. Buckley [C.].

13. **Bufo cæruleostictus.** (Plate XXI. fig. 1.)

Bufo cæruleostictus, *Günth. Proc. Zool. Soc.* 1859, p. 415.

Crown with but a slight indication of bony ridges; snout short, rounded, with angular canthus rostralis; interorbital space concave, broader than the upper eyelid; tympanum hidden. First finger extending slightly beyond second; toes webbed at the base, with simple subarticular tubercles; two feebly developed metatarsal tubercles; a tarsal fold. Limbs rather slender. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Skin nearly smooth, or with small flat tubercles; parotoids elliptic, elongate. Uniform dark brown above, greyish brown beneath. (Male with a subgular vocal sac.)

Ecuador.

a, b. ♀.	W. Ecuador.	Mr. Fraser [C.]. (Types.)

14. Bufo diptychus.

Bufo poeppigii, *Girard, U.S. Expl. Exped., Herp.* p. 90.
—— diptychus, *Cope, Proc. Ac. Philad.* 1862, p. 353, & 1863, p. 50.

Crown without bony ridges; snout elevated, not protruding; tympanum small, scarcely perceptible. Inner finger slightly longer than second; toes one-third webbed; a tarsal cutaneous fold continuous with the inner metatarsal tubercle; outer tubercle subconical. Extended hind limb reaching the tip of the snout. Skin above smooth, with a few scattered tubercles; parotoids divergent, trilateral, extending posterior to axilla, and continuous with a lateral dermal fold; sides and lower surfaces rugulose. Above light brown, with deep-brown spots; a deep-brown chevron-shaped band between the orbits; a light vertebral line; belly brownish white, with a median series of blackish variegations from sternum to abdomen.

Paraguay.

15. Bufo politus.

Bufo politus, *Cope, Proc. Ac. Philad.* 1862, p. 158.

Crown without bony ridges; profile of snout gradually descending nearly to the lip; canthus rostralis none; tympanum one fourth the size of the eye, narrowed above. Extremities stout; toes fully webbed; soles smooth, without tubercles, except that formed by the first cuneiform bone, which is very prominent, oblique, conic; a tarsal ridge, no fold. Skin of the whole body smooth, shining, without rugosities or spines; parotoids oval, moderate; a series of flat glands on each side of the back, symmetrically arranged; glands also on the superior surfaces of humerus, antebrachium, femur, and tibia; three of the last remarkably large. Above olive-brown, the glands bordered with deep brown; inner faces of the extremities straw-coloured, with large brown spots; beneath bright yellow, with variously inosculating black bands; palms and soles slate-colour.

Nicaragua.

16. Bufo monksiæ.

Bufo monksiæ, *Cope, Proc. Amer. Philos. Soc.* xviii. p. 263.

Crown without bony ridges; canthus rostralis sharp, lores perpendicular, snout vertically descending to lip; tympanum concealed. Fingers moderate, first and second equal; toes hardly half webbed; two prominent, blunt, metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the posterior border of orbit. Skin rough, with small harsh tubercles; parotoid rather large, a wide oval. Colour above blackish brown, with a few small ashen spots, and an ashen cross band extending across the eyelids and intervening frontal space; lores and lips brown-spotted; blackish spots on the sides, belly, throat, and limbs.

Guanajuato, Mexico.

17. Bufo mexicanus.

Bufo mexicanus, *Brocchi, Bull. Soc. Philom.* (7) iii. p. 23.

Crown without distinct bony ridges. Tympanum large, very distinct. First finger a little longer than second; toes half webbed; two metatarsal tubercles. Back covered with small round tubercles; parotoids subquadrangular. Brown above, with a few white spots, most distinct on the upper lip; beneath immaculate.

Mexico.

18. Bufo variegatus.

Nannophryne variegata, *Günth. Proc. Zool. Soc.* 1873, p. 402, pl. 30. f. 1 & 2.

Crown without bony ridges; snout short, blunt; interorbital space as broad as the upper eyelid; tympanum absent. First finger not extending beyond second; toes short, flattened, one-third webbed, with double subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the shoulder or the eye. An ovate, well-defined parotoid gland behind the eye; other similar glands on the upper surfaces. Dark brown above, ornamented with five more or less defined light lines along the back, the middle one being generally the most distinct; beneath marbled with black. Male without vocal sac.

Chili; W. Patagonia.

a–b. ♂ & hgr.	Chili.	C. Darwin, Esq. [P.].	
c–d. ♂ & hgr.	Puerto Bueno.	Dr. Cunningham [P.].	Types.
e. ♂.	Port Grappler.	Dr. Cunningham [P.].	
f. Hgr.	Eden Harbour.	Lords of the Admiralty. [P.].	
g–h, i, k. Many spec., ♀ & yg.	Puerto Bueno.	Dr. Coppinger [C.].	
l. ♂.	Port Sharrua.	Dr. Coppinger [C.].	
m. ♂.	Alert Bay.	Dr. Coppinger [C.].	
n. ♂.	Port Riofico.	Dr. Coppinger [C.].	
o. ♀.	Trinidad Channel.	Dr. Coppinger [C.].	
p. ♀.	Crucifixion Channel.	Dr. Coppinger [C.].	
q. ♂.	Latitude Cove.	Dr. Coppinger [C.].	

19. Bufo calamita.

Bufo calamita, *Günth. Cat.* p. 57.

Rösel, Hist. Ran. p. 107, pl. 24.

Bufo calamita, *Laur. Syn. Rept.* p. 27, pl. 1. f. 1; *Daud. Rain.* p. 77, pl. 28. f. 1, *and Rept.* viii. p. 153; *Bonap. Faun. Ital.*; *Bell, Brit. Rept.* p. 116; *Steindachn. Novara, Amph.* p. 40; *Fatio, Vert. Suisse*, iii. p. 402; *Koch, Ber. Senck. Ges.* 1872, p. 166; *Schreib. Herp. Eur.* p. 141; *De Betta, Faun. Ital., Rett. Anf.* p. 75; *Lataste, Herp. Gir.* p. 291; *Leydig, An. Batr.* p. 36; *Bouleng. Proc. Zool. Soc.* 1880, p. 547.

Bufo cruciatus, *Schneid. Hist. Amph.* fasc. i. p. 193.
—— cursor, *Daud. Rept.* viii. p. 164.
—— viridis, part., *Dum. & Bibr.* p. 681.
Epidalea calamita, *Cope, Nat. Hist. Rev.* 1865, p. 102

Crown without bony ridges; snout short, blunt; interorbital space narrower than the upper eyelid; tympanum small, more or less indistinct. First finger not extending beyond second; toes webbed at the base, with double subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. Hind limb short; it being carried forwards along the body, the tarso-metatarsal articulation reaches generally the hinder edge of the eye in males, the shoulder in females. Upper parts with irregular, depressed, distinctly porous warts; parotoids small, oval or subtriangular, depressed; a parotoid-like gland on the calf. Olive-marbled or spotted above; generally a yellow vertebral line; beneath more or less black-spotted. Male with a subgular vocal sac.

Europe.

a–b. ♂ ♀.	Cambridgeshire.	
c–d. ♂.	Blackheath.	
e. Hgr.	Kerry, Ireland.	Dr. Purcell [P.].
f–g. Yg.	Hamburg.	Dr. Fricker [P.].
h. ♀.	Calais.	Dr. W. Leach [P.].
i. ♂.	Madrid.	Lord Lilford [P.].
k. ♂.	Porto.	E. Allen, Esq. [P.].

20. Bufo raddii.

Bufo raddei, *Strauch, Voy. Przewalski, Rept. & Batr.* p. 53; *Lataste, Rev. Int. Sc.* 1878, p. 437; *Bouleng. Proc. Zool. Soc.* 1880, p. 551.

Crown without bony ridges; snout short, blunt; interorbital space narrower than the upper eyelid; tympanum very distinct, half the width of the eye. First finger not extending beyond second; toes shortly webbed, with simple subarticular tubercles; two metatarsal tubercles, the outer much smaller than the inner; a tarsal fold. Hind limb short; it being carried forwards along the body, the tarso-metatarsal articulation marks generally the eye in males, the tympanum in females. Upper parts with irregular, depressed, distinctly porous warts; parotoids rather large, very variable in shape; a parotoid-like gland on the calf. Light olive above, marbled or spotted with brown or blackish; a light vertebral stripe; beneath generally unspotted. Male with a subgular vocal sac.

Eastern temperate Asia.

a–b. ♂ & yg.	Sungatschi.	St. Petersburg Museum.
c–i. ♂, ♀, & hgr.	Chefoo.	R. Swinhoe [P.].

21. Bufo latastii. (Plate XIX. fig. 2.)

Crown without bony ridges; snout short, blunt; interorbital space narrower than the upper eyelid; tympanum very distinct, half the width of the eye. First finger not extending beyond second; toes two-thirds webbed, with double subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum or the hinder edge of the eye. Upper parts with irregular, depressed, distinctly porous warts; parotoids moderate, kidney-shaped; a parotoid-like gland on the calf. Olive above, spotted or marbled with blackish; a light vertebral stripe; beneath more or less spotted or marbled with blackish.

Ladak.

This new species, which I have the pleasure of naming after my friend M. Fernand Lataste, is closely allied to both *B. calamita* and *B. raddii*. From the former it differs chiefly in the great distinctness of the tympanum and the extensive web between the toes; from *B. raddii* in the latter character and in the double subarticular tubercles of the toes.

a–e. ♀, hgr., & yg.	Ladak.	T. C. Jerdon, Esq. [P.].

22. Bufo sumatranus.

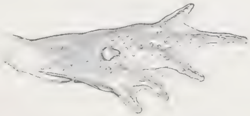
Bufo sumatranus, *Peters, Mon. Berl. Ac.* 1871, p. 648.

Crown without bony ridges; snout short, subacuminate; tympanum distinct, one fourth the width of the eye. First finger not extending beyond second; toes webbed at the base; two moderate metatarsal tubercles; a tarsal fold. Hind limb short. Upper surfaces closely granulate, with large conical warts; parotoids oval, twice as long as broad. Greyish brown above, with brown dark-edged spots; beneath black-spotted.

Sumatra.

23. Bufo halophilus.

Bufo chilensis, part., *Günth. Cat.* p. 57.
Bufo halophila, *Baird & Gir. Proc. Ac. Philad.* 1853, p. 301; *Girard, Proc. Ac. Philad.* 1854, p. 87, *and U.S. Mex. Bound. Surv.* ii. p. 26, pl. 41. f. 7–12.



Lower surface of foot.

Crown without bony ridges; snout short, blunt; interorbital space flat, as broad as the upper eyelid; tympanum very distinct, half the width of the eye. First finger extending beyond second; toes half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Upper surfaces with irregular, distinctly porous warts; paratoids short, subtriangular, depressed. Olive above, marbled with darker; a light vertebral line; belly spotted with blackish.

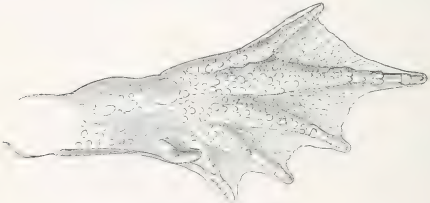
California.

a. ♀.	California.	
b–c. Yg.	Fraser River.	H.M.S. 'Plumper.'

24. Bufo boreas.

Bufo boreas, *Baird & Gir. Proc. Ac. Philad.* 1852, p. 174; *Girard, U.S. Expl. Exped., Herp.* p. 74, pl. 6. f. 4–9.

Bufo columbiensis, *Baird & Gir. Proc. Ac. Philad.* 1853, p. 378; *Girard, l. c.* p. 77, pl. 5. f. 4–9.



Lower surface of foot.

Crown without bony ridges; snout short, blunt; interorbital space flat, or slightly concave, as broad as the upper eyelid; tympanum very distinct, half the width of the eye. First finger not extending beyond second; toes entirely webbed or nearly so, with double subarticular tubercles (generally only under the last phalanges of the longest toe); two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the nostril in males, the tympanum or eye in females. Upper surfaces with irregular, distinctly porous warts; parotoids short, subtriangular or suboval, depressed. Olive above, marbled with darker; generally a light vertebral line; belly more or less spotted with blackish. Male with a subgular vocal sac.

California; Montana.

a. ♂.	Fort Halket.	B. R. Ross, Esq. [P.].
b–d, e. Many spec., ♀ & yg.	Sumass Prairies.	Boundary Commission [C.].
f. ♀.	Vancouver's Island.	Lieut.-Col. Hawkins [C.].
g. Several spec., yg.	S. Juan, Orcas Islands.	Voy. of H.M.S. 'Plumper.' Dr. Lyall [C.].
h–i. ♀.	California.	Mr. Gruber [C.].

25. Bufo viridis.

Bufo viridis, *Günth. Cat.* p. 58.

Bufo viridis, *Laur. Syn. Rept.* pp. 27 & 111, pl. 1; *Daud. Rain.* p. 79, pl. 28. f. 2, *and Rept.* viii. p. 156; *Bonap. Faun. Ital.*; *Guichen. in Lefebvre, Voy. Abyss.* iv. *Zool.* p. 221; *Strauch, Mém. Ac. St. Pétersb.* (7) iv. no. 7, p. 79; *Steindachn. Novara, Amph.* p. 39; *Stoliczka, Journ. As. Soc.* 1870, p. 155; *Fatio, Vert. Suisse,* iii. p. 411; *Koch, Ber. Senck. Ges.* 1872, p. 170; *De Betta, Faun. Ital., Rett. Anf.* p. 74; *Lessona, Atti Ac. Linc. Mem. Cl. Sc. fis. &c.* i. p. 1085, pl. 4; *Bouleng. Proc. Zool. Soc.* 1880, p. 553, pl. 50.
—— schreberianus, *Laur. l. c.* p. 27.
Rana variabilis, *Pallas, Spicil. Zool.* vii. p. 1, pl. 6. f. 1 & 2.
Bufo variabilis, *Merr. Syst. Amph.* p. 180; *Eichw. Zool. Spec. Ross. Pol.* p. 167; *Schreib. Herp. Eur.* p. 138; *Leydig, An. Batr.* p. 29.
—— arabicus, *Rüpp. Reise nördl. Afr., Rept.* p. 20, pl. 5. f. 2.
—— viridis, part., *Dum. & Bibr.* p. 681.
—— calamita, *Günth. Rept. Brit. Ind.* p. 426.
—— boulengeri, *Lataste, Rev. Int. Sc.* 1879, p. 438.

Crown without bony ridges; snout short, rather blunt; interorbital space narrower than the upper eyelid; tympanum distinct, about half the width of the eye. First finger extending a little beyond second; toes half or two-thirds webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks generally the anterior corner of the eye in males, the posterior corner in females. Upper parts with irregular, depressed, distinctly porous warts; parotoids very variable in shape and in size, generally moderately elongate and kidney-shaped, sometimes enormous. Olive or greenish, spotted or marbled above, seldom nearly immaculate; beneath whitish, uniform or blackish-spotted. Male with a subgular vocal sac.

Europe; Asia; N. Africa.

a–c. ♂ ♀.	Germany.	
d. ♀.	Turin.	Prof. Bonelli [P.].
e. ♂.	Baleares.	M. G. A. Boulenger [P.].
f. Yg.	Crimea.	B. L. Hawkins, Esq. [P.].
g. Hgr.	Mediterranean.	Mr. Miller [P.].
h. ♀.	Xanthus.	Ch. Fellows, Esq. [P.].
i–l. ♂ ♀.	Dead Sea.	Rev. H. B. Tristram [C.].
m. ♀.	Mount Carmel.	Rev. H. B. Tristram [C.].
n. ♀.	Damascus.	Dr. Anderson [P.].
o. ♂.	Jericho.	Dr. Anderson [P.].
p, q. ♂ & yg.	Euphrates.	Capt. Chesney's Exped.
r–t. Yg.	Arabia.	Capt. Burton [P.].
u. ♀.	Cilician Taurus.	C. G. Danford, Esq. [P.].
v. ♀.	Albistan.	C. G. Danford, Esq. [P.].
w. Hgr.	Kurdistan.	
x. Yg.	Near Resht, Ghilan, N. Persia.	W. T. Blanford, Esq. [P.].
y–z. ♂ ♀.	Near Bam, S.E. Persia.	W. T. Blanford, Esq. [P.].
a. ♂.	Baluchistan, or S.E. Persia.	W. T. Blanford, Esq. [P.].

β. Many spec.: ♂, yg., & larvæ.	Balti, Tibet.	Messrs. v. Schlagintweit [C.].
γ. Yg.	Tibet.	T. C. Jerdon, Esq. [C.].
δ–ε. ♂ ♀.	Lepsa Ala Tau, Siberia.	
ζ. ♂.	Egypt.	Vienna Museum. (As *B. hemprichii.*)
η–ι. Hgr.	Egypt.	M. Lefebvre [P.].
κ. ♂.	Egypt.	J. Burton, Esq. [P.].
λ–μ. Yg.	Guezama.	Sir W. C. Trevelyan [P.].
ν. Several spec.: ♂, ♀, & hgr.	Tripoli.	
ξ. ♂.	Sahara.	Rev. H. B. Tristram [C.].

26. Bufo mauritanicus.

Bufo pantherinus, part., *Günth. Cat.* p. 59.
Bubo arabicus, *Gervais, Ann. Sc. Nat.* (2) vi. 1836, p. 312.
—— mauritanicus, *Schleg. Wagn. Reis. Alg.* iii. p. 134; *Bouleng. Proc. Zool. Soc.* 1880, p. 557, pl. 51.
—— pantherinus, part., *Dum. & Bibr.* p. 687.
—— pantherinus, *Guichen. Expl. Sc. Alg., Zool.* v. p. 23; *Strauch, Mém. Ac. St. Pétersb.* (7) iv. no. 7, p. 80.

Crown without bony ridges; snout short, blunt; interorbital space concave, broader than the upper eyelid; tympanum very distinct, vertically oval, its greatest diameter not much more than half that of the eye. First finger much longer than second; toes webbed at the base, with double subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout in males, the anterior corner of the eye in females. Upper parts with irregular, depressed, distinctly porous warts; parotoids rather large, elliptic, depressed; calf without large gland, strongly tubercular. Above with large insuliform, dark-edged brown or olive spots; beneath whitish, unspotted. Male with a subgular vocal sac.

N.W. Africa.

a. ♀.	Tangiers.
b, c. Adult (stuffed).	Algiers.
d–e. ♂ ♀.	Tunis.
f. ♀.	Africa.

27. Bufo regularis.

Bufo pantherinus, part., *Günth. Cat.* p. 59.
Bufo guineensis, part., *Günth. l. c.* (*nec Schleg.*).
Geoffr. Descr. Egypte, Rept. pl. 4. f. 1 & 2.
Bufo regularis, *Reuss, Mus. Senckenb.* i. p. 60; *Bouleng. Proc. Zool. Soc.* 1880, p. 560.
—— pantherinus, part., *Dum. & Bibr.* p. 687.
—— cinereus, *Hallow. Proc. Ac. Philad.* 1850, p. 169.
—— maculatus, *Hallow. Proc. Ac. Philad.* 1854, p. 101.

Rana mosaica, *Seetzen, Reise Syr. Paläst. &c.* iii. p. 492.
Bufo spinosus, *Bocage, Proc. Zool. Soc.* 1868, p. 845.

Crown without bony ridges; snout short, rather blunt; interorbital space flat or slightly concave, as broad as or a little narrower than the upper eyelid; tympanum very distinct, vertically oval, as large as the eye, or nearly so. First finger much longer than second; toes one-third webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum or the anterior corner of the eye. Upper parts with irregular, depressed, often spine-bearing warts; parotoids elliptic, more or less elongate. Above uniform or variously spotted; sometimes a light vertebral line; beneath immaculate or with large burnt-like spots. Male with a subgular vocal sac.

Africa; Arabia.

a–c, d–f. ♀ & yg.	Egypt.	A. Christy, Esq. [P.].
g. ♂.	Belliauch, Upper Egypt.	Dr. Anderson [P.].
h. ♀.	Luxor, Upper Egypt.	Dr. Anderson [P.].
i–m. ♀ & hgr.	Lake Ashanghi, Abyssinia.	W. T. Blanford, Esq. [P.].
n–o. ♂ ♀.	Antalo.	
p–q. ♀ & yg.	Zambesi Exped.	Sir J. Kirk [C.].
r–s. ♀.	Gambia.	
t. ♀.	Old Calabar.	Dr. J. A. Smith [P.].
u–y. ♂, ♀, & yg.	Carangigo.	Dr. Welwitsch [C.].
z. ♀.	Duque de Bragance.	Prof. Barboza du Bocage [P.].
α, β. ♂ ♀.	W. Africa	Mr. Rich [C.].
γ. ♂.	Midian.	Capt. Burton [P.].

VAR. A.—Smaller, from snout to vent 55 millim.; tympanum quite close to the eye; fingers slender.

W. Africa.

δ, ε. ♂ ♀.	Coast of Guinea.	
ζ. ♀.	Coast of Guinea.	Sir A. Smith [P.].
η. Hgr.	Sierra Leone.	

VAR. B.—Larger, from snout to vent 136 millim.; interorbital space rather concave; spots generally large, well defined.

S. Africa.

θ, ι. ♀ & yg.	S. Africa.	Sir A. Smith [P.].
κ. ♀.	Cape of Good Hope.	Sir A. Smith [P.].
λ–μ. ♀.	Port Elizabeth.	
ν. ♀.	Port Natal.	T. Ayres, Esq. [C.].

28. **Bufo benguelensis.** (PLATE XIX. fig. 3.)

Bufo guineensis, part., *Günth. Cat.* p. 59.

Very closely allied to *B. regularis*, from which it differs in the following points:—Tympanum not two thirds the width of the eye.

First finger extending slightly beyond second. No indication of a tarsal fold. From snout to vent 53 millim.

W. Africa.

a. ♀.	Benguela.	Prof. Barboza du Bocage [P.].
b. ♀.	Fernando Po.	Mr. Fraser [C.].
c. ♀.	W. Africa.	Mr. Fraser [C.].

29. **Bufo angusticeps.**

Bufo angusticeps, *Günth. Cat.* p. 59.
Bufo pantherinus, part., *Dum. & Bibr.* p. 687.
—— angusticeps, *Smith, Ill. S. Afr.* pl. 69. f. 1; *Bouleng. Proc. Zool. Soc.* 1880, p. 564.
—— gariepensis, *Smith, l. c.* f. 2.

Crown without bony ridges; snout short, blunt; interorbital space narrower than the upper eyelid; tympanum distinct, about one third the width of the eye. Fingers short, first not extending beyond second; toes short, webbed at the base, with simple or double subarticular tubercles; two moderate metatarsal tubercles; a more or less distinct (exceptionally, indistinct) tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the posterior corner of the eye in males, hardly the tympanum in females. Upper parts with irregular, depressed, distinctly porous warts; parotoids generally small, elliptic or suboval, depressed; belly almost entirely smooth. Brown or olive-spotted or marbled above; generally a yellowish vertebral line; beneath generally immaculate. Male with a subgular vocal sac.

S. Africa.

a–d. ♂ ♀.	Cape of Good Hope.	Sir A. Smith [P.]. (As typical of *B. angusticeps.*)
e. ♀.	Cape of Good Hope.	Lords of the Admiralty [P.].
f–g. Hgr.	Cape of Good Hope.	Sir A. Smith [P.]. (As typical of *B. gariepensis.*)
h–k. Hgr.	Vleis, Kaffraria.	F. P. M. Weale, Esq. [P.].
l. ♀.	S. Africa.	

30. **Bufo olivaceus.**

Bufo olivaceus, *Blanford, Ann. & Mag. N. H.* (4) xiv. p. 35, *and E. Persia,* ii. p. 434, pl. 28. f. 3.

Crown without bony ridges; snout short, obliquely truncate from above backwards; interorbital space slightly concave, a little broader than the upper eyelid; tympanum very distinct, vertically oval, its greatest diameter two thirds that of the eye. Fingers moderate, first longer than second; toes moderate, two-thirds webbed; subarticular tubercles simple; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches in front of the eye. Skin of upper surfaces nearly smooth; parotoids depressed, very large, extending to the sacral region; a fold across the occipital region. Uniform olive above; whitish beneath, immaculate. Male with a subgular vocal sac.

Baluchistan.

a. ♂.	Dasht, Baluchistan.	W. T. Blanford, Esq. [P.].

31. Bufo carens.

Schismaderma carens, *Günth. Cat.* p. 138.
Bufo carens, *Smith, Ill. S. Afr., Rept.* pl. 68. f. 1; *Bouleng. Proc. Zool. Soc.* 1880, p. 567.
—— vertebralis, *Smith, l. c.* f. 2.
Schismaderma lateralis, *Smith, l. c. App.* p. 28.

Crown without bony ridges; snout short, truncated; interorbital space broader than the upper eyelid; tympanum very distinct, circular, as large as the eye, close to the latter. First finger extending a little beyond second; toes half webbed; subarticular tubercles simple; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye in males, the tympanum in females. Upper parts with irregular, depressed, distinctly porous warts, forming a glandular lateral fold; parotoids indistinct. Above olive, darker spotted; beneath whitish, blackish-spotted. Male with a subgular vocal sac.

S. Africa.

a–c, d–f. ♂ ♀.	Natal.	Sir A. Smith [P.]. (As typical of *B. carens.*)
g–m. Yg.	Cape of Good Hope.	Sir A. Smith [P.]. (As typical of *B. vertebralis.*)

32. Bufo blanfordii. (Plate XIX. fig. 4.)

Head rather large, without bony ridges; snout short, rounded, with indistinct canthus rostralis; interorbital space as broad as the upper eyelid, flat; tympanum distinct, vertically oval, not quite half the diameter of the eye. Fingers moderate, first extending very slightly beyond second; toes moderate, half webbed, with simple subarticular tubercles; two small metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the centre of the eye in the female, in front of the eye in the male. Skin covered with small warts; parotoids none. Olive above, indistinctly marbled with darker; a dark line from the tip of the snout, through the nostril to the eye; a few large spots on the sides of the head; beneath immaculate. Male with a subgular vocal sac. From snout to vent 43 millim.

Abyssinia.

a–b. ♀ & hgr.	Ain Samhar.	W. T. Blanford, Esq. [P.].
c. ♂.	Sooroo.	W. T. Blanford, Esq. [P.].

33. Bufo compactilis.

Bufo anomalus, *Günth. Cat.* p. 57.
Bufo compactilis, *Wiegm. Isis,* 1833, p. 661; *Peters, Mon. Berl. Ac.* 1863, p. 89, & 1873, p. 624.
Anaxyrus melancholicus, *Tschudi, Faun. Per., Herp.* p. 78, pl. 11. f. 5.
? Bufo speciosus, *Girard, Proc. Ac. Philad.* 1854, p. 86, *and U.S. Mex. Bound. Surv.* ii. p. 26, pl. 40. f. 5–10.
Bufo levifrons, *Bocourt, Bull. Soc. Philom.* (7) i. p. 187.
Dromoplectrus anomalus, *Camerano, Atti Acc. Tor.* xiv. p. 882.

Crown without bony ridges; snout short, blunt; interorbital space broader than the upper eyelid; tympanum small [indistinct in this specimen]. First finger extending beyond second; toes half webbed, with double subarticular tubercles; two compressed metatarsal tubercles, the inner very large, shovel-shaped as in *Pelobates*; tarsal fold indistinct. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches hardly the eye. Upper surfaces with small spiny warts; parotoids moderate, subquadrangular, depressed. Olive above, with irregular blackish spots; beneath with a few small black spots. [Male with a subgular vocal vesicle.]

Texas; Mexico; Peru.

a. Hgr.	Mexico.	(Type of *Bufo anomalus.*)

34. Bufo simus.

Bufo simus, *Günth. Cat.* p. 139.
Bufo simus, *Schmidt, Denkschr. Ac. Wien,* 1858, p. 254, t. 3. f. 22.

Crown without bony ridges; snout short; tympanum hidden. First finger longer than second; toes half webbed; no tarsal fold. Back with larger and smaller flat warts; parotoids moderate, irregularly rounded. Above grey or brown, beneath with blackish irregular spots.

Chiriqui River.

35. Bufo spinulosus.

Bufo chilensis, part., *Günth. Cat.* p. 56.
? Rana thaul, *Molina, Hist. Nat. Chili,* p. 194.
Bufo thaul, *Garn. & Less. Voy. Coq.* ii. pl. 7. f. 6.
—— spinulosus, *Wiegm. Nov. Act.* xvii. t. 22. f. 3; *Tschudi, Batr.* p. 88; *Peters, Mon. Berl. Ac.* 1863, p. 80, & 1873, p. 623; *Steindachn. Novara, Amph.* p. 42.
—— chilensis, *Tschudi, Batr.* p. 88; *Eydoux & Soul. Voy. Bonite,* t. 9. f. 1, 2; *Bell, Zool. Beagle,* p. 49; *Dum. & Bibr.* p. 678; *Guichen. in Gay, Hist. Chile, Herp.* p. 125, pl. 5. f. 3; *Espada, Viaj. Pacif., Vert.* p. 204.
—— trifolium, *Tschudi, Faun. Per., Herp.* p. 72, pl. 11. f. 3.
—— lineo-maculatus, *Guichen. l. c.* p. 128, pl. 5. f. 5.
—— rubro-punctatus, *Guichen. l. c.* pl. 5. f. 4; *Steindachn. l. c.*
—— lugubrosus, *Girard, U.S. Expl. Exped., Herp.* p. 85, pl. 6. f. 10–15.

Crown without bony ridges; snout short, blunt; interorbital space concave, as broad as the upper eyelid; tympanum very small, very distinct. First finger extending beyond second; toes half webbed, or rather more, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye in males, the tympanum in females. Upper surfaces with irregular, distinctly porous, sometimes spiny, warts; parotoids short, subtriangular or rounded. Olive or brownish above, with blackish, more or less confluent spots; beneath uniform or black-spotted. Male without vocal sac.

Chili; Peru.

a–c, d, e, f, g, h, i, k–l, m–n. ♂, ♀, hgr., & yg.	Chili.	
o. Yg.	Chili.	C. Darwin, Esq. [P.].
p. ♂.	Valparaiso.	C. Darwin, Esq. [P.].
q. Yg.	Rio Chupat.	C. Darwin, Esq. [P.].
r. ♂.	Valdivia.	
s–t. ♂ ♀.	High Peru.	Prof. Taczanowski [C.].
u–v. ♀ & yg.	Cusco.	J. B. Pentland, Esq. [P.].

36. Bufo vulgaris.

Bufo vulgaris, *Günth. Cat.* p. 569.

Rösel, Hist. Ran. p. 85, pls. 20 & 21.

Rana bufo, *Linn. S. N.* i. p. 354.

—— rubeta, *Linn. l. c.*

Bufo vulgaris, *Laur. Syn. Rept.* pp. 28 & 125; *Daud. Rain.* p. 72, pl. 24, *and Rept.* viii. p. 139; *Eichw. Zool. spec. Ross. Polon.* p. 167; *Bonap. Faun. Ital.*; *Bell, Brit. Rept.* p. 105; *Dum. & Bibr.* p. 671; *Guichen. Expl. Sc. Alg., Rept.* p. 27; *Strauch, Mém. Ac. Sc. St. Pétersb.* (7) vii. p. 79; *Fatio, Vert. Suisse,* iii. p. 587; *Schreib. Herp. Eur.* p. 134; *De Betta, Faun. Ital., Rett. Anf.* p. 72; *Lataste, Herp. Gir.* p. 283, pl. 11; *Leydig, An. Batr.* p. 12; *Lessona, Atti Ac. Linc. Mem. Cl. Sc. fis.* i. p. 1080, pl. 4; *Bouleng. Proc. Zool. Soc.* 1880, p. 569.

—— cinereus, *Schneid. Hist. Amph.* i. p. 185; *Daud. Rain.* p. 73, pl. 25, *and Rept.* viii. p. 141; *Merr. Syst. Amph.* p. 182; *Koch, Ber. Senck. Ges.* 1872, p. 174.

—— rubeta, *Schneid. l. c.* p. 227.

—— roeselii, *Daud. Rain.* p. 77, pl. 27, *and Rept.* viii. p. 150, pl. 96.

—— ventricosus, *Daud. Rain.* p. 83, pl. 30, *and Rept.* viii. p. 168; *Merr. l. c.* p. 131.

—— spinosus, *Daud. Rept.* viii. p. 199.

—— palmarum, *Cuv. R. A.* 2nd ed. ii. p. 109.

—— colchicus, *Eichw. l. c.*

—— alpinus, *Schinz, Faun. Helv.* p. 144.

—— vulgaris japonicus, *Schleg. Faun. Japon., Rept.* p. 106, pl. 2; *Lataste, Le Naturaliste,* 1880, p. 219, *and Bull. Soc. Zool. France,* 1880, p. 66.

Phryne vulgaris, *Fitzing. Syst. Rept.* i. p. 32.

Bufo gargarizans, *Cantor, Ann. & Mag. N. H.* ix. p. 483.

Bufo commutatus, *Steenstr. Ber. 24. Vers. deutsch. Naturf. &c. Kiel,* p. 134.
—— griseus, *Hallow. Proc. Ac. Philad.* 1860, p. 506.
—— japonicus, *Camerano, Atti Ac. Tor.* xiv. 1879, p. 884.

Crown without bony ridges; snout short, blunt; interorbital space broader than the upper eyelid; tympanum small, round, often indistinct. First finger extending scarcely beyond second; toes at least half webbed; subarticular tubercles double; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches generally the eye in the male, the shoulder in the female. Upper parts with more or less prominent, often spinose, not distinctly porous warts; parotoids elliptic, rather elongate, very prominent. Brownish above, spotted or marbled with darker; beneath whitish, more or less spotted with black; parotoids margined on their outer side with black, which in Chinese and Japanese specimens extends as a vitta along the upperside of the flanks. Male without vocal sac.

Europe; Asia; N.W. Africa.

a. Skeleton.	England.	
b. ♀.	Devonshire.	Mus. Leach.
c, d. ♀.	Isle of Arran.	Mus. Leach.
e. ♀.	Spring Grove.	Mus. Leach.
f. ♂.	Paris.	
g–h. ♀.	Coruña, Spain.	M. V. L. Seoane [C.].
i. ♀.	Valencia, Spain.	Lord Lilford [P.].
k, l. ♂ ♀.	Porto.	E. Allen, Esq. [P.].
m–n. ♂ ♀.	Bononia.	Prof. J. J. Bianconi [P.].
o. ♀.	Sicily.	
p. Stuffed.	Athens.	C. W. Merlin, Esq. [P.].
q–t. ♂ ♀.	Chefoo.	R. Swinhoe [P.].
u, v, w. ♀ & hgr.	Shanghai.	R. Swinhoe [P.].
x–y, z–α. ♀, hgr., & yg.	Ningpo.	
β–ε. Hgr. & yg.	Chusan.	
ζ, η–θ. ♀ & hgr.	Chusan.	Dr. Cantor.
ι–κ. Hgr.	Chusan.	E. India Comp.
λ–ξ. ♂, ♀, & hgr.	Japan.	Leyden Museum.
ο. ♂.	Japan.	Sir A. Smith [P.].

37. Bufo tuberosus.

Bufo tuberosus, *Günth. Cat.* p. 60, pl. iii. f. C.
Bufo tuberosus, *Bouleng. Proc. Zool. Soc.* 1880, p. 572.

Crown without bony ridges; snout short, prominent, obliquely truncated; interorbital space slightly concave, about as broad as the upper eyelid; tympanum distinct, about half the width of the eye. Fingers slender, first much longer than second; toes rather short, webbed at the base; subarticular tubercles very large and prominent, simple; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout in the male, between the eye and the nostril in the female. Upper parts with very prominent, spinous, indistinctly porous warts; parotoids very prominent, oval, oblique, rough; lower surfaces covered with minute granules intermixed with larger spinous ones. Uniform brown, lighter beneath, immaculate or with indistinct spots. Male without vocal sac.

W. Africa.

a. ♂.	Fernando Po.	(Type.)
b. Yg.	Gaboon.	
c. ♀	—— ?	Sir A. Smith [P.].

38. Bufo taitanus.

Bufo taitanus, *Peters, Mon. Berl. Ac.* 1878, p. 208, pl. 2. f. 9.

Crown without bony ridges; snout rather prominent; tympanum hidden. Fingers and toes short, the latter shortly webbed; two small metatarsal tubercles; no tarsal fold. Upper surfaces covered with prominent warts; parotoids flat and elongate. Dark yellowish brown, with irregular longitudinal and transverse black spots; limbs irregularly barred; belly marbled and spotted with black.

Taita, E. Africa.

39. Bufo sikkimensis.

Bombinator sikkimensis, *Blyth, Journ. As. Soc.* xxiii. p. 300.
Scutiger sikkimensis, *Theobald, Cat. Rept. As. Soc. Mus.* 1868, p. 83.
Bufo sikkimensis, *Anders. Proc. Zool. Soc.* 1871, p. 204; *Stoliczka, Proc. As. Soc.* 1874, p. 112.

Crown without bony ridges; snout short, rounded; tympanum hidden. Toes nearly half webbed. Upper surfaces covered with small pointed tubercles; parotoids small or moderate. Upper side of back and limbs ashy or olive, with numerous more or less confluent vinaceous brown spots; parotoids and the large tubercles distinctly reddish; a few brown spots on the sides of the head; below pale yellowish throughout, usually densely marbled with olive-brown. Breeding male with two plate-like callosities on either side of the thorax, thickly studded with minute dark-brown points; inner surface of the three inner fingers with similar rugosities.

Himalayas.

40. Bufo himalayanus. (PLATE XX.)

Bufo melanostictus, var. himalayanus, *Günth. Rept. Brit. Ind.* p. 422.

Physiognomy of *B. vulgaris*. Crown deeply concave, with low, blunt supraorbital ridges; snout short, blunt; interorbital space broader than the upper eyelid; tympanum very small, rather indistinct. First finger not extending beyond second; toes half or two-thirds webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches in front of the eye, or the tip of the snout. Upper parts with irregular, distinctly porous warts; parotoids very prominent, large, elongate, at least as long as the head. Uniform brown. Male without vocal sacs.

Himalayas.

a. ♂.	Nepal.	B. H. Hodgson, Esq. [P.].
b–c. ♂ ♀.	Sikkim.	Dr. Hooker [P.].
d. Hgr.	Sikkim.	W. T. Blanford, Esq. [P.].
e. ♀.	Darjeeling.	W. T. Blanford, Esq. [P.].
f–g. ♂ ♀.	Darjeeling.	T. C. Jerdon, Esq. [P.].

41. Bufo melanostictus.

Bufo melanostictus, *Günth. Cat.* p. 61.
Bufo isos, *Günth. l. c.* p. 62.
Bufo melanostictus, *Schneid. Hist. Amph.* p. 216; *Gravenh. Delic.* p. 57; *Cantor, Cat. Mal. Rept.* p. 142; *Girard, U.S. Expl. Exped., Herp.* p. 92, pl. 5. f. 10–14; *Günth. Rept. Brit. Ind.* p. 422; *Steindachn. Novara, Amph.* p. 42; *Stoliczka, Proc. As. Soc.* 1870, p. 155.
—— scaber, *Daud. Rain.* p. 94, pl. 34. f. 1, *and Rept.* viii. p. 194; *Tschudi, Batr.* p. 88; *Dum. & Bibr.* p. 699; *Schleg. Abbild.* p. 64, pl. 20. f. 2.
—— bengalensis, *Daud. Rain.* p. 96, pl. 35. f. 1, *and Rept.* viii. p. 197; *Lesson, in Bélang. Voy. Ind. Or., Rept.* p. 334.
—— isos, *Lesson, l. c.* p. 333, pl. 7; *Dum. & Bibr.* p. 702.
—— dubia, (*Shaw*) *Gray, Ind. Zool.*
—— carinatus, *Gray, l. c.*
—— gymnauchen, *Bleeker, Nat. Tijdschr. Nederl. Ind.* 1858, xvi. p. 46.
Phrynoidis melanostictus, *Cope, Proc. Ac. Philad.* 1863, p. 357.
Bufo spinipes, (*Fitzing.*) *Steindachn. l. c.* p. 43, pl. 5. f. 6.

Head with more or less elevated bony ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, and a short orbito-tympanic; snout short, blunt; interorbital space much broader than the upper eyelid; tympanum very distinct, at least two thirds the width of the eye. First finger extending generally, but not always, beyond second; toes at least half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; tarsal fold none (sometimes present, according to Stoliczka). The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum or the eye. Upper surfaces with more or less prominent, generally spiny, warts; parotoids very prominent, kidney-shaped or elliptic, more or less elongate. Yellowish or brownish above, the spines of the warts and the ridges of the head generally black; beneath immaculate or more or less spotted. Male with a subgular vocal sac.

E. Indies; S. China.

a. Hgr.	Canton.	Haslar Coll.
b–c. ♂ & hgr.	Hongkong.	J. C. Bowring, Esq. [P.].

d–f. Hgr. & yg.	China.	J. C. Bowring, Esq. [P.].
g. ♂.	China.	J. Reeves, Esq. [P.].
h. ♀.	China.	
i. ♀.	Sikkim.	Dr. Hooker [P.].
k. ♀.	Sikkim.	Messrs. v. Schlagintweit [C.].
l–m. ♀ & hgr.	Bengal.	Zoological Society [P.].
n–p. ♂, ♀, & hgr.	Madras.	T. C. Jerdon, Esq. [P.].
q. Adult, stuffed.	Madras.	
r–s, t–w. ♂, hgr., & yg.	Ceylon.	
x–y. ♀.	Ceylon.	Dr. Kelaart [P.].
z. Hgr.	S. Ceylon.	
α. ♂.	Gamboja.	M. Mouhot [C.].
β–γ. ♀ & yg.	Siam.	M. Mouhot [C.].
δ. ♀.	Pinang.	Dr. Cantor.
ε. ♀.	Bintang.	Dr. Bleeker [P.]. (Type of *Bufo gymnauchen.*)
ζ–η. ♀.	Java.	Leyden Museum.
θ. ♀.	Java.	
ι, κ. ♂ ♀.	Java.	Dr. Ploem [C.].
λ, μ, ν–ξ. ♂ ♀.	Borneo.	
ο. ♀.	Philippine Islands.	
π. ♀.	Mauritius (imported).	M. L. Bouton [P.].

42. Bufo microtympanum. (Plate XXII. fig. 1.)

Head with prominent bony ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, and a short orbito-tympanic; snout short, blunt; interorbital space broader than the upper eyelid; tympanum very small, not half the width of the eye, generally indistinct. First finger extending beyond second; toes about half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; tarsal fold none. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye, or between the eye and the tip of the snout. Upper surfaces with irregular, distinctly porous warts. Parotoids prominent, elliptic, twice or twice and a half longer than broad. Brown above, yellow beneath, marbled with brown. Male with a subgular vocal sac. From snout to vent 77 millim.

This species is closely allied to *B. melanostictus*, from which it is well distinguished by its very small tympanum.

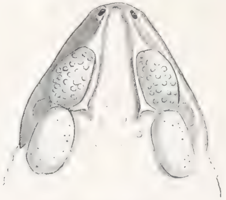
Malabar.

a. Several spec.: ♂, ♀, hgr., & yg.	Malabar.	Col. Beddome [P.].

43. Bufo intermedius.

Bufo intermedius, *Günth. Cat.* p. 140, pl. ix. f. A.
Bufo intermedius, *Camerano, Atti Acc. Tor.* xiv. p. 887.

A supraorbital and a postorbital bony ridge, the latter hidden by the skin and rectangular with the former; only a trace of parietal and preorbital ridges; snout short, blunt; interorbital space broader than the upper eyelid; tympanum moderately distinct, about half the width of the eye. First finger longer than second; toes half webbed; subarticular tubercles generally double; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Upper surfaces covered with small warts; parotoids elliptic, moderate, close to the eye. Olive above, with irregular, sometimes confluent, dark spots; belly immaculate, or with slight spots. Male with a subgular vocal sac.



Upper view of head.

Ecuador; Mexico.

a-d. ♂ ♀.	Andes of Ecuador.	Mr. Fraser [C.]. (Types.)

44. Bufo dipternus.

Bufo dipternus, *Cope, Amer. Nat.* xiii. p. 437.

Two faint straight supraorbital ridges, and a postorbital, but no supratympanic ridge; snout truncate; tympanum rather indistinct, two thirds the diameter of the eye. Toes shortly webbed at the base; two shovel-shaped metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum. Skin rough with small tubercles; parotoid a wide oval, in contact with the postorbital ridge. Above ashen, with large brown, black-edged spots; below immaculate; metatarsal spurs black.

Montana.

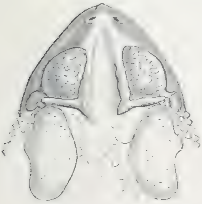
45. Bufo lentiginosus.

Bufo lentiginosus, *Günth. Cat.* p. 63.
Catesby, Nat. Hist. Carol. ii. pl. 69; *Bart. Travels in Carol.* p. 279.
? Rana musica, *Linn. S. N.* i. p. 354.
Bufo lentiginosus, *Shaw, Zool.* iii. p. 173.
—— musicus, *Tschudi, Batr.* p. 88; *Harlan, Journ. Ac. Philad.* v. p. 344.

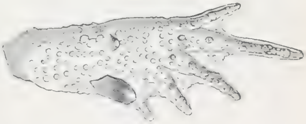
A supraorbital and a postorbital bony ridge, forming together a right angle; snout short, blunt; interorbital space as broad as, or a little narrower than, the upper eyelid; tympanum very distinct, generally nearly as large as the eye. First finger extending beyond second; toes half webbed; two metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum or the eye. Upper surfaces with irregular warts; parotoids moderate, elliptic or kidney-shaped. Brownish olive above, with dark-brown spots, two of which form a chevron between the eyes; generally a light vertebral line; lower surfaces immaculate or dark-spotted. Male with a subgular vocal sac.

VAR. A. americanus.

Bufo americanus, (*Leconte*) *Holbr. N.-Amer. Herp.* v. pl. 4; *Dum. & Bibr.* p. 695; *Hallow. Proc. Ac. Philad.* 1856, p. 251; *Girard, U.S. Mex. Bound. Surv.* ii. p. 25; *Wied, Nova Acta,* xxxii. p. 121.
—— quercicus, *Holbr. N.-Amer. Herp.* v. pl. 3.
—— dorsalis, *Hallow. Proc. Ac. Philad.* 1852, p. 181, *and in Sitgreaves, Exped. Zuni & Color. Riv.* p. 142, pl. 19.
—— woodhousii, *Girard, Proc. Ac. Philad.* 1854, p. 86.
Chilophryne americana, *Cope, Proc. Ac. Philad.* 1863, p. 357.



Upper view of head.



Lower surface of foot.

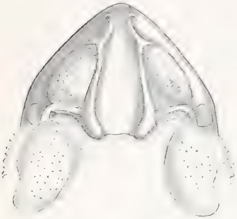
Supraorbital ridges low; subarticular tubercles under the toes generally double; inner metatarsal tubercle large, compressed, spade-shaped; outer tubercle small.

a. Yg.	Great Bear Lake.	Sir J. Richardson [P.].
b–d. Yg.	Lake Winnipeg.	Sir J. Richardson [P.].
e. ♀.	New York.	
f, g. ♀ & albinos, yg.	N. America.	Dr. J. Green [P.].
h–i, k. ♀ & yg.	N. America.	Lord Ampthill [P.].
l–m, n. ♂ ♀.	N. America.	
o. ♀.	America.	
p. ♀.	Mexico.	
(This specimen is intermediate between vars. A and B.)		
q. Many spec., yg.	Brazil (??).	Dr. Gardiner [P.].
r. ♀.	Puerto Cabello (?).	

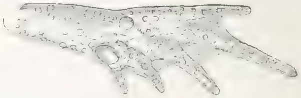
VAR. B. musicus.

Bufo musicus, *Latr. Rept.* ii. p. 127; *Daud. Rain.* p. 9, pl. 33. f. 3, *and Rept.* viii. p. 190; *Merr. Tent.* p. 185; *Gravenh. Delic.* p. 59;

Holbr. N.-Amer. Herp. v. pl. 1; *Dum. & Bibr.* p. 689; *Leconte, Proc. Ac. Philad.* 1855, p. 430.
Bufo lentiginosus, *Girard, Proc. Ac. Philad.* 1854, p. 86.
Chilophryne lentiginosa, *Cope, Proc. Ac. Philad.* 1863, p. 357.



Upper view of head.



Lower surface of foot.

Supraorbital ridges swollen behind and produced beyond the angle of the postorbitals; subarticular tubercles generally simple; metatarsal tubercles moderate.

s, t. Many spec.: ♂, ♀, & yg.	N. America.	E. Doubleday, Esq. [P.].

Mr. Cope (Check-list N. Amer. Rept.) distinguishes besides the three following varieties:—

Var. C. **frontosus.**

Bufo frontosus, *Cope, Proc. Ac. Philad.* 1866, p. 301.

Var. D. **cognatus.**

Bufo cognatus, (*Say*) *Holbr. N.-Amer. Herp.* v. p. 21.

Var. E. **fowleri.**

Bufo fowleri, *Putnam, MS.*

46. Bufo occipitalis.

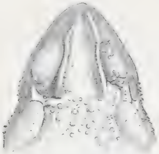
Bufo occipitaiis, *Camerano, Atti Ac. Tor.* xiv. p. 889.

Crown deeply concave, on each side with a straight bony ridge, very prominent and swollen behind (resembling a parotoid); a slight orbito-tympanic ridge. Snout pointed, prominent; tympanum small, not very distinct. First and second fingers equal; toes nearly entirely webbed; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the tip of the snout. Skin covered with small granular tubercles; parotoid moderate, its lower border forming an angle.

Mexico.

47. Bufo biporcatus.

Bufo biporcatus, *Günth. Cat.* p. 62.
Bufo biporcatus, (*Schleg.*) *Tschudi, Batr.* p. 88; *Gravenh. Delic.* p. 53; *Dum. & Bibr.* p. 714.
Chilophryne biporcata, *Cope, Proc. Ac. Philad.* 1862, p. 357.



Upper view of head.

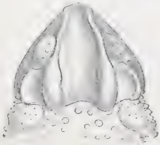
Crown with bony ridges, viz. a supraorbital and a parietal, forming together a straight or nearly straight line, and a short orbito-tympanic; snout short, subacuminate, with prominent canthus rostralis; interorbital space a little broader than the upper eyelid; tympanum very distinct, as large as the eye. First finger generally not extending beyond second; toes half or two-thirds webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum or the eye. Upper surfaces with very prominent, conical, spiny tubercles; parotoids very prominent, small, subtriangular or oval. Brownish above, marbled with darker; beneath more or less spotted with brown. Male with a subgular vocal sac.

Java, Borneo.

a–b. ♀.	Java.	Leyden Museum.
c, d. ♂ ♀.	Java.	Dr. Ploem [C.].
e–i. ♀ & hgr.	Java.	G. Lyon, Esq. [P.].
k–m. ♀ & hgr.	Borneo.	L. L. Dillwyn, Esq. [P.].

48. Bufo claviger.

Bufo claviger, *Peters, Mon. Berl. Ac.* 1863, p. 405.



Upper view of head.

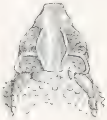
Closely allied to *B. biporcatus*, from which it differs in the much more developed cranial ridges, which are much swollen behind, club-shaped, and in the smaller tympanum, the diameter of which equals hardly two thirds that of the eye.

Sumatra.

a. ♀.	Sumatra.	Zoological Soc. Coll.
b. ♀.	——?	College of Surgeons [P.].

49. Bufo divergens.

Bufo divergens, *Peters, Mon. Berl. Ac.* 1871, p. 579, *and Ann. Mus. Civ. Gen.* iii. p. 43.



Upper view of head.

Closely allied to *B. biporcatus*, from which it differs in the following points:—Supraorbital ridges divergent, forming an angle with the parietal ridges; tympanum two thirds the width of the eye; first finger extending beyond second; tarso-metatarsal articulation reaching beyond the tip of the snout.

Borneo.

a–b. Hgr.	Matang.	
c–d. Hgr.	Labuan.	L. L. Dillwyn, Esq. [P.].

50. Bufo parietalis. (Plate XXI. fig. 2.)

Crown with very prominent ridges, viz. a canthal, a slight preorbital, a supraorbital, a postorbital, a parietal, and an orbito-tympanic; parietal ridges obliquely directed inwards; snout short, blunt; interorbital space broader than the upper eyelid; tympanum distinct, two thirds the width of the eye. First finger extending beyond second; toes half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Upper surfaces covered with irregular warts; parotoids moderate, elliptic, very prominent. Uniform brown above; beneath marbled with brown. Male with a subgular vocal sac. From snout to vent 82 millim.

Malabar.

a–b, c. ♂ ♀.	Malabar.	Col. Beddome [C.].

51. Bufo asper.

Bufo asper, *Günth. Cat.* p. 62.
Bufo asper, *Gravenh. Delic.* p. 58; *Tschudi, Batr.* p. 88; *Schleg. Abbild.* p. 63, pl. 20. f. 1; *Dum. & Bibr.* p. 668; *Günth. Rept. Brit. Ind.* p. 423; *Steindachn. Novara, Amph.* p. 44.
Phrynoidis asper, *Fitzing. Syst. Amph.* i. p. 32.

A broad supraorbital and a thick orbito-tympanic bony ridge; snout short, obliquely truncate; canthus rostralis angular; loreal region vertical; interorbital space broader than the upper eyelid; tympanum distinct, one third the width of the eye. First finger not extending beyond second; toes entirely webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout, or beyond. Upper surfaces with very prominent, conical, spiny tubercles; parotoids very prominent, small, subtriangular. Uniform brown above; beneath immaculate or spotted.

East-Indian Archipelago; E. India.

a. ♀.	Java.	Leyden Mus.
b. ♀.	Java.	
c. ♀.	Borneo.	L. L. Dillwyn, Esq. [P.].
d. Yg.	Borneo.	H. Lowe, Esq. [P.].
e–f. ♀.	Mergui.	Prof. Oldham [P.].
g. Several spec., yg.	Tenasserim.	Col. Beddome [C.].
h. Hgr.	——?	College of Surgeons [P.].

52. Bufo celebensis.

Bufo celebensis, *Günth. Cat.* p. 61.
Bufo celebensis, (*Schleg.*) *Steindachn. Novara, Amph.* p. 44.
Chilophryne celebensis, *Cope, Proc. Ac. Philad.* 1862, p. 357.

A broad supraorbital and a thick, elevated, orbito-tympanic bony ridge; snout short, obliquely truncate; canthus rostralis angular; loreal region vertical; interorbital space broader than the upper eyelid; tympanum moderately distinct, not quite half the width of the eye. First finger extending beyond second; toes not quite half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Upper surfaces with conical, spiny warts; parotoids very prominent, more or less elongate, oval or subtriangular. Brown above, with indistinct darker spots; beneath clouded with greyish brown. Male with a subgular vocal sac.

Celebes.

a. ♂.	Celebes.	
b. ♀.	Mount Boliohoeto, N. Celebes.	Dr. A. B. Meyer [C.].
c–d. ♀.	Manado.	Dr. A. B. Meyer [C.].
e. ♂.	Macassar.	Sir A. Smith [P.].
f. Hgr.	India.	

53. Bufo galeatus.

Bufo galeatus, *Günth. Rept. Brit. Ind.* p. 421, pl. 26. f. L.

Closely allied to *B. celebensis*, from which it differs in the following points:—Snout narrower; orbito-tympanic bony ridge higher, confluent with the parotoid, so that externally no division is visible between them; tympanum very distinct, three fourths the width of the eye. Greyish brown above, marbled with chestnut-brown; throat and chest pink; lower surfaces marbled with brown.

Gamboja.

a. ♀.	Gamboja.	M. Mouhot [C.].	(Type.)

54. Bufo bocourtii.

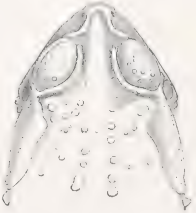
Bufo bocourti, *Brocchi, Bull. Soc. Philom.* (7) i. p. 186.

A slight canthal, a supraorbital, a postorbital, and a parietal bony ridge; the latter very short, curved inwards; supraorbital and postorbital ridges forming a right angle; snout short, vertically truncate; tympanum hidden. First and second fingers equal; toes half webbed; two moderate metatarsal tubercles; a slight tarsal fold. Upper surfaces with conical warts; parotoids narrow, elongate and subtriangular. Sides of head and body marbled with black; upper lip white-edged beneath the eye; a light vertebral line.

Totonicapam, Mexico.

55. Bufo arenarum.

Bufo arenarum, *Hensel, Arch. f. Naturg.* 1867, p. 148; *Camerano, Atti Acc. Tor.* xiv. 1879, p. 891.
—— marinus, var. platensis, *Espada, Viaj. Pacif., Vert.* p. 202.



Upper view of head.

Crown with moderately prominent bony ridges, viz. a canthal, confluent with a preorbital, a supraorbital, and a very short orbito-tympanic; canthal ridge not confluent with supraorbital; snout short, blunt; interorbital space as broad as upper eyelid; tympanum very distinct, vertically elliptic, nearly as large as the eye. First finger extending beyond second; toes half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches in front of the tympanum. Upper surfaces with irregular warts; parotoids very prominent, narrow, elongate, pointed behind; a lateral series of large warts, confluent with the parotoid. Upper surfaces brown, with large, irregular, black-edged dark spots; beneath with a few dark spots; sometimes a larger dark spot on the sternal region. Size of *B. calamita*.

S. Brazil; Uruguay; Buenos Ayres.

a–b. ♀.	Monte Video.	Dr. Cunningham [P.].
c–d. ♀ & hgr.	Buenos Ayres.	C. Darwin, Esq. [P.].
e–f. ♀.	Oran Salta, Buenos Ayres.	E. W. White, Esq. [C.].

(The latter specimens show a coloration very similar to that of *B. viridis*.)

56. Bufo molitor.

Bufo molitor, *Tschudi, Faun. Per., Herp.* p. 73, pl. 12; *Peters, Mon. Berl. Ac.* 1873, p. 624.
—— andianus, *Cope, Proc. Ac. Philad.* 1868, p. 115.

Appears to differ from *B. marinus* in the following points:—Snout pinched, narrow, angulate; tympanum less than half diameter of eye; parotoid elongate, triangular, narrow, continued into a lateral dermal fold.

W. S. America.

57. Bufo marinus.

Bufo agua, *Günth. Cat.* p. 65.

Seba, i. pl. 76. f. 1.
Rana marina, *Linn. S. N.* i. p. 356; *Laur. Syn. Rept.* p. 31.
Bufo marinus, *Schneid. Hist. Amph.* p. 219; *Shaw, Zool.* iii. p. 155; *Merr. Tent.* p. 182; *Gravenh. Delic.* p. 54; *Girard, U.S. Expl. Exped., Herp.* p. 80, pls. v. f. 1–3, & vi. f. 1–3; *Steindachn. Novara, Amph.* p. 45; *Peters, Mon. Berl. Ac.* 1872, p. 220; *Espada, Viaj. Pacif., Vert.* p. 195.
—— agua, *Latr. Rept.* ii. p. 13; *Daud. Rain.* p. 99, pl. 37, *and Rept.* viii. p. 209; *Spix, Spec. Nov. Test. Ran.* p. 44, pl. 15; *Wied, Beitr. Nat. Bras.* i. p. 551, *and Abbild.*; *Tschudi, Batr.* p. 88; *Dum. & Bibr.* p. 703; *Hensel, Arch. f. Naturg.* 1868, p. 141; *Brocchi, Bull. Soc. Philom.* (7) i. p. 188.
—— horridus, *Daud. Rain.* p. 97, pl. 96, *and Rept.* viii. p. 201.
—— humeralis, *Daud. Rept.* viii. p. 205.
Bombinator horridus, *Merr. Tent.* p. 179.
Bufo maculiventris, *Spix, l. c.* p. 43, pl. 14. f. 1.
—— ictericus, *Spix, l. c.* p. 44, pl. 16. f. 1; *Gravenh. l. c.*
—— lazarus, *Spix, l. c.* p. 45, pl. 17. f. 1.
Phryncidis agua, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Crown with prominent bony ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, and a short orbito-tympanic; parietal ridge, if present, not very prominent; snout short, blunt; interorbital space much broader than the upper eyelid; tympanum distinct, about two thirds the width of the eye. First finger extending beyond second; toes half or two-thirds webbed; subarticular tubercles of the last phalanges of fourth toe generally double, the others simple; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye or the nostril. Upper surfaces with irregular, sometimes spiny warts; parotoids enormous, variable in shape. Brownish above, immaculate or with large dark spots; beneath immaculate or spotted. Male with a subgular vocal sac.

S. and C. America; W. Indies.

a, b, c–d. ♂ ♀.	Jamaica.	
e. ♀.	Trinidad.	Sir A. Smith [P.].
f. Several spec., hgr. & yg.	Barbadoes.	Sir A. Smith [P.].
g. ♀.	Mexico.	
h. Yg.	Mexico.	M. Sallé [C.].
i–k. Hgr. & yg.	Vera Cruz.	
l–n, o. ♂, ♀, hgr., & yg.	Lanquin, Vera Paz.	O. Salvin, Esq. [C.].
p, q, r. ♂ ♀.	W. Ecuador.	Mr. Fraser [C.].
s, t. ♂ ♀.	Guayaquil.	Mr. Fraser [C.].
u. Hgr.	Canelos, Ecuador.	Mr. Buckley [C.].
v–w. Yg.	Cayaria.	W. Davis [C.], Messrs. Veitch [P.].
x, y, z, α, β–γ. ♂, ♀, & yg.	Venezuela.	Mr. Dyson [C.].
δ. ♀.	Upper Essequibo.	Sir R. Schomburgk [P.].
ε. Hgr.	Better Hope, British Guiana.	
ζ. ♀.	Demerara.	
η. Stuffed.	Demerara.	
θ. Hgr.	Vryheids Lust, Demerara.	
ι, κ, λ–μ. ♂, ♀, hgr., & yg.	Para.	R. Graham, Esq. [P.].
ν. Hgr.	Para.	
ξ. ♀.	Carbo, Pernambuco.	W. A. Forbes, Esq. [P.].
ο. ♂.	Bahia.	
π. ♂.	Rio Janeiro.	Lords of the Admiralty [P.].
ρ–ς. ♂ & hgr.	Rio Janeiro.	C. Darwin, Esq. [P.].
τ, υ. Hgr., skins.	Rio Janeiro.	Mrs. Parker [P.].
φ. Skeleton.	Brazil.	
χ. Skeleton.	S. America.	
ψ. Adult.	—— ?	

58. Bufo crucifer.

Bufo ornatus, *Günth. Cat.* p. 64.

Bufo crucifer, *Wied, Reise Bras.* ii. p. 132; *Peters, Mon. Berl. Ac.* 1872, p. 221.

—— ornatus, *Spix, Spec. Nov. Test. Ran.* p. 45, pl. 16. f. 2; *Gravenh. Delic.* p. 54; *Wied, Abbild.*; *Hensel, Arch. f. Naturg.* 1868, p. 147; *Steindachn. Novara, Amph.* p. 46; *Espada, Viaj. Pacif., Vert.* p. 204.

—— dorsalis, *Spix, l. c.* p. 46, pl. 17. f. 2; *Hensel, l. c.* p. 144.

Bufo scaber, *Spix, l. c.* p. 47, pl. 20. f. 1.
—— cinctus, *Wied, Beitr.* i. p. 564, *and Abbild.*
—— melanotis, *Dum. & Bibr.* p. 710; *Hensel, l. c.* p. 148.
—— gracilis, *Girard, Proc. Ac. Philad.* 1853, p. 424, *and U.S. Expl. Exped., Herp.* p. 83, pl. 6. f. 16–21.
Phrynoidis ornatus, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Differs from *B. marinus* in the following points:—Habit less stout, the tarso-metatarsal articulation reaching nearly always beyond the eye, frequently to the tip of the snout; toes rather longer, with shorter web; tympanum larger, about three fourths the width of the eye; parotoids much smaller, elongate; size much smaller.

From young *B. typhonius* it may readily be distinguished, as it lacks the angular projection of the angles of the jaws.

A tarsal fold is generally present; a lateral line of warts. Brownish above, with symmetrical black spots; a blackish oblique streak on the temporal region; flanks and hinder side of thighs frequently black, marbled with yellow; generally a light, sometimes black-edged, vertebral line; beneath grey-spotted. Male with a subgular vocal sac.

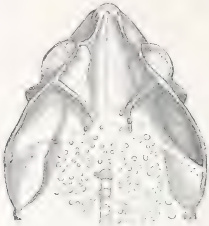
S. America.

a, b. ♂.	Puerto Cabello.	
c. ♂.	Para.	R. Graham, Esq. [P.].
d. ♀.	Rio Janeiro.	Lords of the Admiralty [P.].
e, f, g, h–i. ♂, ♀, hgr., & yg.	Brazil.	Lord Stuart [P.].
k. ♀.	Brazil.	Dr. Gardiner.
l–o, p–s. ♂, ♀, hgr., & yg.	S. America.	C. Darwin, Esq. [P.].

59. Bufo typhonius.

Bufo ocellatus, *Günth. Cat.* p. 64.
Otilophus margaritifer, *Günth. l. c.* p. 69.
Seba, i. t. 71, f. 6–9; *Cuv. R. A.*
Rana typhonia, *Linn. S. N.* i. p. 356; *Shaw, Zool.* iii. p. 159.
—— margaritifera, *Laur. Syn. Rept.* p. 30.
Bufo typhonius, *Schneid. Hist. Amph.* i. p. 207; *Merr. Tent.* p. 181; *Gravenh. Delic.* p. 53; *Peters, Mon. Berl. Ac.* 1872, p. 224, and 1873, p. 624.
—— nasutus, *Schneid. l. c.* p. 217; *Spix, Spec. Nov. Test. Ran.* p. 50, t. 14. f. 3.
—— margaritifer, *Latr. Rept.* ii. p. 118; *Daud. Rain.* pl. 33. f. 1, *and Rept.* viii. p. 179; *Dum. & Bibr.* p. 718; *Schmidt, Denkschr. Ac. Wien*, 1858, p. 251, pl. 2. f. 15, 16; *Steindachn. Novara, Amph.* p. 47.
—— (Oxyrhynchus) naricus, *Spix, l. c.* p. 49, t. 14. f. 2.
—— (——) acutirostris, *Spix, l. c.* p. 52, t. 21. f. 3.
—— (——) proboscideus, *Spix, l. c.* p. 53, t. 21. f. 4.
Oxyrhynchus spixii, *Wied, Abbild.*
Otilophus typhonius, *Tschudi, Batr.* p. 89.
Trachycara fusca, *Tschudi, Faun. Per., Herp.* p. 78, pl. 11. f. 5.
Bufo pleuropterus, *Schmidt, Denkschr. Ac. Wien*, 1858, p. 252, pl. 2. f. 17–19.

Oxyrhynchus typhonius, *Espada, Viaj. Pacif., Vert.* p. 171.
—— proboscideus, *Espada, l. c.* p. 178.
—— iserni, *Espada, l. c.* p. 185.



Upper view of head.

Head regularly triangular, the angles of the maxillaries forming a more or less prominent point on each side; crown on each side with an enormous, erect, sharp bony ridge from the orbit to the parotoid, in the adult; this ridge scarcely developed in the young; a more or less distinct parietal ridge; snout prominent, pointed; interorbital space much broader than the upper eyelid; tympanum more or less distinct, about two thirds the width of the eye. First finger not extending beyond second; toes half or two-thirds webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye or a little beyond. Skin covered with small warts; parotoids rather small, subtriangular, oblique; a lateral fold formed by a series of large conical warts. Brown above, with a few black spots; frequently a light vertebral line; beneath immaculate or spotted. Male with a subgular vocal sac.

S. America.

a. Skeleton.	Cayenne.	
b–d. Hgr. & yg.	Vryheids Lust, Dutch Guiana.	
e–g. Hgr.	Santarem.	
h. Hgr.	Santarem.	Mr. Wickham [C.].
i. ♀.	Para.	R. Graham, Esq. [P.].
k–p. Hgr.	Para.	
q. Hgr.	Brazil.	(Type of *B. ocellatus.*)
r. ♀.	Pebas.	
s. ♀.	W. Ecuador.	Mr. Fraser [C.].
t. ♀.	Guayaquil.	Mr. Fraser [C.].
u. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].
v. Several spec., ♀ & hgr.	Cayaria.	W. Davis [C.], Messrs. Veitch [P.].
w. ♀ & hgr.	Tropical America.	H. W. Bates [C.].

60. Bufo ceratophrys. (Plate XXII. fig. 2.)

A supraorbital and an orbito-tympanic bony ridge; an indication of a parietal ridge; snout short, truncate, with angular canthus rostralis; upper eyelid produced in a horn-like appendage, the length of which is greater than the orbital diameter; tympanum distinct, rather more than half the width of the eye. First finger extending beyond second; toes webbed at the base only, with simple subarticular tubercles; two small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout. Skin covered with very small tubercles; parotoids moderate, subovate; a series of four pointed appendages on each side of the body. Greyish brown above, with dark-brown markings; sides dark-brown marbled; lower surfaces slightly spotted with brownish.

Ecuador.

a. Hgr.	Ecuador.	Mr. Buckley [C.].

61. Bufo dialophus.

Chilophryne dialopha, *Cope, Proc. Ac. Philad.* 1862, p. 341.

Pre- and postorbital, supra-tympanic, and supraorbital ridges well developed, the last marking a very open angle with that of the canthus rostralis, and sending off posteriorly a parietal, which first converges towards that opposite, and then runs transversely on the occiput to meet it, failing in this by a very slight interval. Snout prominent, conic. Tympanum one fourth the size of the orbit. First finger shorter than second, which equals the third; toes short, one-third webbed; two acute metatarsal tubercles, the internal large, incurved, like a flattened spur. Skin everywhere rigidly rugose; parotoids large, short, subtriangular. Above dark brown, with a pale vertebral band, on either side of which are two blackish dorsal spots, one temporal and one on the canthus rostralis; a black band from orbit to angle of mouth; beneath light brown, blackish shaded.

Sandwich Islands.

62. Bufo valliceps.

Bufo nebulifer, *Günth. Cat.* p. 66.

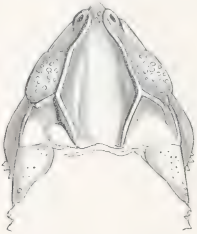
Bufo valliceps, *Wiegm. Isis*, 1833, p. 657; *Peters, Mon. Berl. Ac.* 1863, p. 81.

—— granulosus, *Baird & Girard, Proc. Ac. Philad.* 1852, p. 173.

—— nebulifer, *Girard, Proc. Ac. Philad.* 1854, p. 87; *Hallow. ibid.* 1856, p. 308; *Girard, U.S. Mex. Bound Surv.* ii. p. 25, pl. 40. f. 1–4.

Chilophryne nebulifera, *Cope, Proc. Ac. Philad.* 1862, p. 357.

Crown very concave, with very prominent ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, a parietal, and an orbito-tympanic; parietal ridges obliquely directed inwards; snout subacuminate; loreal regions very oblique; interorbital space much broader than the upper eyelid; tympanum very distinct, nearly as large as the eye. First finger extending beyond second; toes half webbed, with simple subarticular tubercles; two small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the front edge of the tympanum and the tip of the snout. Upper surfaces thickly covered with conical warts; parotoids short, round, or subtriangular, oblique; generally a series of large, strongly conical warts forms a lateral line beginning from the posterior end of the parotoid. Brown or blackish above; a black cross streak between the angles of the supraorbital and parietal ridges; generally a light vertebral line and a broad lateral light band; beneath immaculate or black-spotted, the throat and breast sometimes, especially in males, black. Male with a subgular vocal sac.



Upper view of head.

Texas; Central America.

a. ♀.	Texas.		
b, c. ♀ & hgr.	Mexico.	M. Sallé [C.].	
d. Yg.	Mexico.	M. Sallé [C.].	Types of *B. sternosignatus*, juv.
e. Yg.	Cordova.	M. Sallé [C.].	
f. ♀.	Vera Cruz.		
g, h–l. ♀, hgr., & yg.	Jalapa, Mexico.	Mr. Hoege [C.].	
m–q. ♂ ♀.	Vera Paz.	O. Salvin, Esq. [P.].	
r. ♀.	Dueñas, Guatemala.	O. Salvin, Esq. [C.].	

63. Bufo melanochlorus.

Bufo valliceps, var., *Cope, Journ. Ac. Philad.* 1865, p. 100.
—— melanochlorus, *Cope, Proc. Amer. Philos. Soc.* xvii. p. 85.

Crown with prominent ridges, viz. a very weak preorbital, a supraorbital, a postorbital, a long parietal, and an orbito-tympanic; snout not projecting; tympanum very distinct, half the diameter of the orbit. Toes long, nearly free; two metatarsal tubercles; no tarsal fold. Legs short, the heel reaching the posterior border of the orbit. Skin nearly smooth above, except on the scapular and iliac regions; parotoids quite small, subtriangular, oblique; a lateral dermal fold. Green, with deep black spots; throat and thorax black.

E. Costa Rica.

64. **Bufo coniferus.**

Bufo coniferus, *Cope, Proc. Ac. Philad.* 1862, p. 158.
Chilophryne conifera, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Crown with prominent ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, a parietal, and a short orbito-tympanic; supraorbital ridges perfectly straight; parietal ridges slightly directed inward; snout prominent; tympanum distinct, half the size of the eye. Hind limb elongate. Toes extensively webbed; two large, flat, oval metatarsal tubercles; no tarsal fold. Dorsal region with obtuse tubercles; numerous elongate conic warts on the sides, largest on a fold from parotoid to groin; parotoid very small, not more than half the extent of the upper eyelid, studded with conic warts. Brownish grey above, with a few large dark-brown spots, which do not interrupt a median line.

Turbo Region, Colombia.

65. **Bufo auritus.**

Bufo auritus, *Cope, Journ. Ac. Philad.* (n. s.) viii. part 2, p. 99, pl. 23. f. 4.

Crown flat, with prominent ridges, viz. a canthal, a supraorbital, a postorbital, a straight parietal, and an orbito-tympanic; tympanum distinct in its anterior half. Fingers remarkably elongate; toes elongate, half webbed; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches beyond the tip of the snout. Tubercles of the skin small, spinulose, most numerous on the sides, wanting below; parotoids quite small, surmounted by several dermal spines. Colour brown; a quadrate patch on vertex from orbits to occiput, an oblique band from the latter outwards on each side, and a spot on each lateral sacral region black; belly marbled with black.

Costa Rica.

66. **Bufo veraguensis.**

Bufo veraguensis, *Günth. Cat.* p. 142.
Bufo veraguensis, *Schmidt, Denkschr. Ac. Wien,* 1858, p. 253, t. 2. f. 20, & t. 3. f. 21.
Chilophryne veraguensis, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Crown concave, with obtuse bony ridges, viz. a supraorbital, a postorbital, an oblique parietal, and an orbito-tympanic; tympanum entirely hidden. Fingers very slender, first shorter than second;

toes entirely webbed; no tarsal fold. Skin warty; parotoids moderate, prominent, oblong; on each side of the back a series of larger tubercles. Above greyish, marbled with blackish brown; yellowish grey beneath, here and there marbled with darker.

Colombia.

67. Bufo coccifer.

Bufo coccifer, *Cope, Proc. Ac. Philad.* 1866, p. 130, *and Journ. Ac. Philad.* (n. s.) viii. p. 100.

Crown with strong bony ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, an oblique parietal, and an orbito-tympanic; snout narrowly rounded; tympanum one fifth orbit. Toes shortly webbed; metatarsal tubercles small, obtusely prominent; tarsal fold scarcely visible. Heel to axilla. Everywhere minutely tubercular; parotoids round, semiglobular. Grey-brown; a yellow vertebral line, with numerous chestnut-brown bands, one from parotoid and one from groin; under surfaces immaculate.

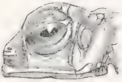
Costa Rica.

68. Bufo d'orbignyi.

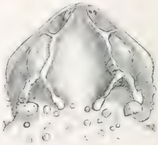
Bufo d'orbignyi, *Günth. Cat.* p. 67.

Bufo d'orbignyi, *Dum. & Bibr.* p. 697; *D'Orbigny, Voy. Amér. mérid.* t. 15. f. 5–7; *Hensel, Arch. f. Naturg.* 1867, p. 141.

Chilophryne d'orbignyi, *Fitzing. Syst. Rept.* i. p. 32; *Espada, Viaj. Pacif., Vert.* p. 168.



Lateral view of head.



Upper view of head.

Crown very concave, with very prominent ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, a parietal, and an orbito-tympanic; parietal ridges obliquely directed inwards; edge of the upper jaw dilated behind; snout very short, rounded; interorbital space much broader than the upper eyelid; tympanum more or less distinct, about two thirds the width of the eye. First finger not extending beyond the second; toes half webbed, with double subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the shoulder or the tympanum. Upper surfaces with small, frequently spinous warts; parotoids very small, subtriangular or rounded, sometimes scarcely distinct. Brownish olive, with indistinct darker spots; a light vertebral line; beneath immaculate. Male with a subgular vocal sac.

Uruguay; S. Brazil.

a–c. ♂ & yg.	Monte Video.	C. Darwin, Esq. [P.]
d. ♀.	Monte Video.	

69. Bufo sternosignatus.

Bufo sternosignatus, *Günth. Cat.* p. 68, pl. 5. f. C.

Bufo sternosignatus, *Keferst. Götting. Nachr.* 1867, p. 352, *and Wiegm. Arch.* 1868, p. 294.

Crown with a low ridge round the orbit and a strong orbito-tympanic one; snout pointed, vertically truncate; interorbital space flat, broader than the upper eyelid; tympanum distinct, about two thirds the width of the eye. First finger not extending beyond second; toes half webbed, with generally double subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Upper surfaces covered with small tubercles; parotoids moderate, subtriangular; a lateral series of larger tubercles, commencing from the posterior angle of the parotoid. Brownish above, with symmetrical dark-brown markings, the most constant of which is a broad cross band between the eyes; a more or less defined light vertebral line, sometimes black-edged; throat and breast spotted or marbled with brown, with a rectangular light cross. Male with a subgular vocal sac.

Venezuela; Colombia; Costa Rica.

a. ♀.	Puerto Cabello.	} Types.
b–c. ♂ ♀.	Venezuela.	
d–e. Hgr.	Bogotá.	

70. Bufo canaliferus.

Bufo canaliferus, *Cope, Proc. Amer. Philos. Soc.* xvii. p. 85.

Head narrow, with strong ridges, viz. a preorbital, a supraorbital, a postorbital, and a very short orbito-tympanic; snout slightly prominent, contracted; interorbital space gutter-like, a little narrower than the upper eyelid; tympanum distinct, somewhat more than half the diameter of the eye. First finger not extending beyond second; toes half webbed, with simple subarticular tubercles; two rather small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Skin tubercular; parotoids large, triangular; a lateral series of large tubercles. Light brown above, with a light vertebral band; on each side of the latter are large blackish-brown angular spots; a dark band extending from the orbit to the middle of the side; beneath immaculate. Male with a subgular vocal sac.

Tehuantepec.

a. ♂.	Tehuantepec.	Brussels Museum [E.].

71. Bufo argillaceus.

Bufo argillaceus, *Cope, Proc. Ac. Philad.* 1868, p. 138.

Differs from *B. granulosus* in lacking the preorbital ridge and having a longer muzzle. A tarsal dermal fold. Parotoids elongate trigonal, the long angle prolonged towards the sides.

Western Mexico.

72. Bufo granulosus.

Bufo granulosus, *Günth. Cat.* p. 67, pl. v. f. A.
Bufo granulosus, *Spix, Spec. Nov. Test. Ran.* p. 51, pl. 21. f. 2; *Peters, Mon. Berl. Ac.* 1872, p. 225.
—— globulosus, *Spix, l. c.* p. 49, pl. 19. f. 1.
Chaunus marmoratus, *Wagl. Isis,* 1828, p. 744.
—— globulosus, *Wagl. Syst. Amph.* p. 205.
Bufo nasutulus, *Wiegm. Isis,* 1833, p. 656; *Peters, Mon. Berl. Ac.* 1863, p. 80; *Steindachn. Novara, Amph.* p. 45.
—— strumosus, part., *Dum. & Bibr.* p. 716.
Phrynoidis granulosus, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Derm of head more or less completely involved in cranial ossification; a slight bony ridge round the eye; snout acuminate, prominent; interorbital space slightly broader than the upper eyelid; tympanum distinct, about two thirds the width of the eye. First finger not extending beyond second; toes half webbed, with double subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the shoulder or the tympanum. Upper surfaces covered with small, frequently spiny tubercles; parotoids moderate, subtriangular, frequently rather indistinct. Brownish above, marbled with darker; lower surfaces immaculate. Male with a subgular vocal sac.

E. S. America.

a–b, c. ♂ ♀.	Pernambuco.	J. P. G. Smith, Esq. [P.].
d. ♀.	Pernambuco.	W. A. Forbes, Esq. [P.].
e. ♀.	Dutch Guiana.	Sir A. Smith [P.].
f. ♂.	S. America.	H. W. Bates, Esq. [C.].
g–i. Yg.	——?	

73. Bufo gutturosus.

Bufo gutturosus, *Günth. Cat.* p. 67, pl. v. f. B.
Bufo gutturosus, *Latr. Rept.* ii. p. 135; *Daud. Rain.* p. 82, pl. 34. f. 2 (B. strumosus), *and Rept.* viii. p. 166.
Bombinator strumosus, *Merr. Tent.* p. 179.
Bufo strumosus, *Gravenh. Delic.* t. 9. f. 3.
—— strumosus, part., *Dum. & Bibr.* p. 716.
Phrynoidis gutturosus, *Cope, Proc. Ac. Philad.* 1863, p. 357.
Peltaphryne lemur, *Cope, Proc. Ac. Philad.* 1868, p. 311.

Derm of head involved in cranial ossification; crown with prominent ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, and an orbito-tympanic; snout acuminate, prominent; loreal region very concave; interorbital space much broader than the upper eyelid; tympanum distinct, about two thirds the width of the eye. First finger not extending beyond second; toes half or two-thirds webbed, with double subarticular tubercles; two moderate metatarsal tubercles; a short tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the shoulder and the tympanum. Upper surfaces covered with small tubercles; parotoids moderate, transverse, rather indistinct. Brownish above, marbled with darker; sometimes a light vertebral stripe; beneath immaculate. Male with a subgular vocal sac.

W. Indies.

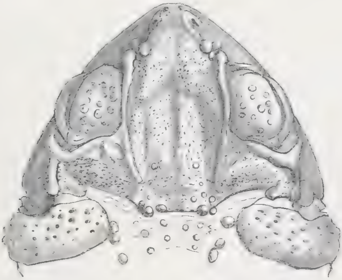
a–c, d, e. ♂, ♀, & yg.	S. Domingo.	
f. ♀.	S. Domingo.	Sir A. Smith [P.].
g–h. ♂ ♀.	Hayti.	J. Hearne, Esq. [P.].

74. Bufo peltocephalus.

Bufo peltocephalus, *Günth. Cat.* p. 67.

Bufo peltocephalus, *(Bibr.) Tschudi, Batr.* p. 89; *Bibr. in Ramon de la Sagra, Hist. Cuba, Rept.* pl. 30; *Dum. & Bibr.* p. 712.

Peltophryne peltocephala, *Fitzing. Syst. Rept.* i. p. 32.



Upper view of head.

Derm of head involved in cranial ossification; crown with prominent ridges, viz. a canthal, a supraorbital, a postorbital, and an orbito-tympanic; canthal ridge not confluent with supraorbital, ending in a knob; supraorbital and postorbital ridges forming a right angle; snout short, blunt; interorbital space much broader than the upper eyelid; tympanum very distinct, two thirds or half the width of the eye. First finger not extending beyond second; toes half webbed; subarticular tubercles double under the last phalanges of fourth toe; two moderate metatarsal tubercles; a short tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum. Upper surfaces covered with rather small warts; parotoids very prominent, elliptical or crescent-shaped, transverse. Uniform brown above; beneath immaculate. Male with a subgular vocal sac.

W. Indies.

a–c. Hgr. & yg.	Cuba.	W. Macleay, Esq. [P.].
d, e. ♂ ♀.	Cuba.	

75. **Bufo empusus.**

Peltaphryne empusa, *Cope, Proc. Ac. Philad.* 1862, p. 344.
Otaspis empusa, *Cope, Proc. Ac. Philad.* 1868, p. 312.

Differs from *B. peltocephalus* in the existence of an additional superficial arch of the skull, which passes from the mastoid region behind the auricular meatus, thus enclosing the latter, and causing it to be a mere foramen perforating a shield of bone. Tympanum small, only one fourth or one third the length of the palpebral border in diameter; parotoid small, rounded, lateral.

Cuba.

76. **Bufo fastidiosus.**

Cranopsis fastidiosus, *Cope, Journ. Ac. Philad.* (n. s.) viii. part 2, p. 96, pl. 23. f. 1.

Cranial integument entirely occupied by a rugose ossification; cranial ridges consisting of elevated canthus rostralis, supra- and postorbital border, and a supratympanic crest extending to the parotoid gland; these, especially the last, are obtusely thickened; supratympanic crest produced downwards behind the orbit as a rugose osseous plate to opposite the inferior border of the eye, bounding the position usually occupied by the membranum tympani by a rough concave margin; no tympanum. Fingers short; toes half webbed; metatarsal tubercles indistinct; no tarsal fold. The hind limb being carried forwards along the body, the end of the longest toe reaches the end of the snout. Parotoids short, subtriangular, as deep as long; upper surfaces of body and limbs studded with round warts, so closely on the latter region as to resemble a pustular disease. Yellowish brown above; a blackish band extends from the parotoid to the axilla; top of head yellow or brownish yellow; throat with a black spot.

Costa Rica.

77. **Bufo epioticus.**

Crepidius epioticus, *Cope, Journ. Ac. Philad.* (n. s.) viii. part 2, p. 97, pl. 23. f. 2.

Cranial crests consisting of orbito-tympanic, supraorbital, and canthal ridges, the last two continuous with each other and extending in a nearly straight line to the nares, with a slight thickening opposite the front of the orbit; a low, narrow postorbital ridge; no trace of tympanum. Digits of hands and feet enclosed in the skin, leaving the longest median digit projecting; inner digits of hands and feet rudimentary; no metatarsal tubercles; no tarsal fold. Hind limbs short. Skin with minute tubercles; parotoids very small, subrotund. General colour black, above a little lighter, with a few darker spots on each side; sometimes a brown median dorsal band.

Costa Rica.

5. NECTES.

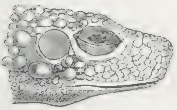
Pseudobufo, *Tschudi, Batr.* p. 87.
Nectes, *Cope, Nat. Hist. Rev.* 1865, p. 103.

Pupil horizontal. Tongue elliptical, entire and free behind. Palate smooth. Nostrils directed upwards. Tympanum distinct. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. No omosternum; sternum a cartilaginous plate, ossified along the centre. Diapophyses of sacral vertebra rather strongly dilated. Terminal phalanges simple.

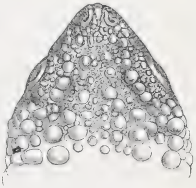
Java.

1. Nectes subasper.

Pseudobufo subasper, *Tschudi, l. c.*
Nectes subasper, *Cope, l. c.*



Lateral view of head.



Upper view of head.

Head rather small; snout prominent, obliquely truncate; loreal regions nearly vertical; nostrils small, tear-shaped, close together near the end of the snout, directed upwards; upper eyelid rather narrow; interorbital space broad; tympanum perfectly distinct, three fourths the diameter of the eye. Fingers slender, pointed, first shorter than second; toes rather long, pointed, united to the tips by a very broad membrane; no subarticular tubercles; two very indistinct, flat metatarsal tubercles; a rather indistinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout. Upper surfaces covered with closely set, smooth round warts of different sizes, the largest being distinctly porous; sides and lower surfaces granulate. Dark brown above, the largest warts light-coloured; light brown beneath, immaculate. Male with a subgular vocal sac.

Java.

a. ♂.	Java.	Dr. Bleeker.

6. NOTADEN.

Notaden, *Günth. Ann. & Mag. N. H.* (4) xi. 1873, p. 349.

Pupil horizontal. Tongue circular, entire, free behind. Vomerine teeth. A dermal ridge between the choanæ, and another in front of this. Tympanum hidden. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. Omosternum and sternum cartilaginous, rudimentary. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

Australia.

1. Notaden bennetti. (Plate XXII. fig. 3.)

Notaden bennetti, *Günth. l. c.* p. 350.

Habit extremely stout. Two small bony prominences close together behind the level of the choanæ. Head very short and high; cleft of mouth not extending beyond the vertical of the centre of the eye; latter moderately large, scarcely prominent; interorbital space as broad as the upper eyelid. Limbs short, clumsy; fingers and toes short, depressed, latter webbed at the base; first and second fingers equal; subarticular tubercles of fingers slightly distinct, of toes quite indistinct; a large shovel-shaped inner metatarsal tubercle; no other tubercle. Skin of the back strongly glandular, very thick; upper surfaces with flat warts. Light olive above, with a large cross-shaped blackish marking on the back; sides and limbs blackish, white-spotted; beneath whitish, throat with scattered black spots.

E. Australia.

a. ♀.	Castlereagh River.	Sydney Museum. (Type.)
b. ♀.	Castlereagh River.	Dr. Bennett [P.].
c. Yg.	Wilson's River, Queensland.	

7. MYOBATRACHUS.

Myobatrachus, *Schleg. Proc. Zool. Soc.* 1850, p. 9; *Günth. Cat.* pp. 3 & 128.

Chelydobatrachus, (*Gray*) *Günth. Cat.* p. 273.

Pupil erect. Tongue small, elliptical, entire and free behind. Palate smooth. Tympanum distinct. Fingers and toes free, the tips not dilated. Outer metatarsals united. Epicoracoid cartilages narrow, scarcely overlapping; no omosternum; sternum cartilaginous, ossified on the median line. Diapophyses of sacral vertebra rather strongly dilated. Terminal phalanges simple.

Australia.

1. Myobatrachus gouldii.

Myobatrachus paradoxus, *Günth. Cat.* pp. 3 & 128.
Chelydobatrachus gouldii, *Günth. l. c.* p. 53.
Breviceps gouldii, *Gray, in Grey's W. Austr.* ii. p. 448, pl. i. f. 1.
Myobatrachus paradoxus, *Schleg. Proc. Zool. Soc.* 1850, p. 9, *and Handl. Dierk.* ii. pl. 4. f. 76; *Peters, Mon. Berl. Ac.* 1867, p. 37.
Myobatrachus gouldii, *Gray, Proc. Zool. Soc.* 1850, p. 10.

Habit extremely stout. Head very small, with short rounded snout; canthus rostralis absent; crown swollen; eye very small; tympanum more or less distinct, rather larger than the eye. Limbs excessively short; fore limb very strong, adapted for burrowing; fingers short, much depressed; hind limb weaker; toes not longer than the fingers, also much depressed; subarticular tubercles indistinct; two rather indistinct flat metatarsal tubercles, outer largest. Skin smooth, or with small scattered tubercles. Above greyish brown, beneath lighter. Male with a subgular vocal sac.

W. Australia.

a. ♀.	W. Australia.	Mr. Gilbert. (Type.)
b. ♀.	Houtmans Abrolhos.	
c, d–e. ♂ ♀.	Swan River.	Sir A. Smith [P.].

8. RHINOPHRYNUS.

Rhinophrynus, *Dum. & Bibr.* viii. p. 127; *Günth. Cat.* p. 127; *Cope, Nat. Hist. Rev.* 1865, p. 100.

Pupil erect. Tongue elongate, subtriangular, free in front. Palate smooth. No tympanum. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. Epicoracoid cartilages narrow, scarcely overlapping; no omosternum; sternum rudimentary. Diapophyses of sacral vertebra rather strongly dilated. Terminal phalanges simple.

Mexico.

1. Rhinophrynus dorsalis.

Rhinophrynus dorsalis, *Günth. Cat.* p. 127, pl. xii.
Rhinophrynus dorsalis, *Dum. & Bibr.* p. 758, pl. 91. f. 2; *Günth. Proc. Zool. Soc.* 1858, p. 339.
—— rostratus, *Brocchi, Bull. Soc. Philom.* (7) i. p. 196, *and Miss. Sc. Mex., Batr.* pl. 9. f. 1.

Habit extremely stout. Head small; mouth very narrow; snout long, truncated, forming a flat circular disk in front; nostrils vertical, nearly on a line with the front edge of the eyes; eyes very small. Limbs very short; fingers and toes depressed, latter nearly entirely webbed; subarticular tubercles indistinct; inner toe tubercle-like; a very large oval, shovel-like metatarsal tubercle. Skin smooth above, granular on the sides and beneath and on the snout. Olive-brown or bluish grey above, with or without yellowish spots on the sides and on the middle of the back; the latter sometimes confluent into a vertebral line. (Male with two lateral vocal cavities, internal, and hidden behind the angle of the mouth. —*Gthr.*)

Mexico.

a. ♂.	Mexico.	M. Sallé [C.].
b–c. ♀ & yg.	Mexico.	
d–e. Yg.	Vera Cruz.	M. Sallé [C.].
f–g. Yg.	S. America.	M. Sallé [C.].

8. HYLIDÆ.

Hylidæ, Pelodryadidæ, and Phyllomedusidæ, *Günth. Cat. Batr. Sal.*
Hylidæ, *Cope, Nat. Hist. Rev.* 1865, *and Journ. Ac. Philad.* (2) vi. 1866.
Hylidæ and Phyllomedusidæ, *Mivart, Proc. Zool. Soc.* 1869.

Upper jaw toothed; diapophyses of sacral vertebra dilated; terminal phalanges claw-shaped, swollen at the base.

The sternal apparatus is much the same in all the members of this family; the omosternum and the sternum are always present and cartilaginous.

The vertebræ are procœlian and destitute of ribs. The coccyx is attached to two condyles.

Most of the species have a fronto-parietal fontanelle; this is absent in the adult state in several species of *Hyla* and in *Nototrema*; in a few species of the former genus, in *Nyctimantis*, and in *Triprion* the skin of the head is replaced by the rugose cranial ossification.

Thoropa, *Chorophilus*, and *Acris*, in which the diapophyses of the sacral vertebra are slightly dilated, connect the *Hylidæ* with the *Cystignathidæ*.

Synopsis of the Genera.

Pupil horizontal; toes free, the tips very slightly dilated.
1. **Thoropa**, p. 331.

Pupil horizontal; toes nearly free, the tips very slightly dilated; diapophyses of sacral vertebra very slightly dilated.
2. **Chorophilus**, p. 332.

Pupil horizontal; toes webbed, the tips very slightly dilated; diapophyses of sacral vertebra very slightly dilated.
3. **Acris**, p. 336.

Pupil horizontal; toes more or less webbed; tongue adherent or moderately free behind; vomerine teeth.
4. **Hyla**, p. 337.

Characters of *Hyla*, but with a dorsal pouch in the female.
5. **Nototrema**, p. 416.

Pupil horizontal; toes webbed; tongue moderately free behind; vomerine teeth none .... 6. **Hylella**, p. 419.

Pupil vertical; tongue scarcely free behind.
7. **Nyctimantis**, p. 421.

Pupil vertical; tongue extensively free behind; inner toe not opposable .... 8. **Agalychnis**, 422.

Pupil vertical; tongue extensively free behind; inner finger and toe opposable .... 9. **Phyllomedusa**, p. 424.

Pupil vertical; parasphenoid toothed; labial margin much prolonged .... 10. **Triprion**, p. 431.

1. THOROPA.

Thoropa, *Cope, Nat. Hist. Rev.* 1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Ololygon, (*Fitzing.*) *Steindachn. Novara, Amph.* p. 64.

Pupil horizontal. Tongue heart-shaped, free behind. Vomerine teeth. Tympanum distinct. Fingers and toes free, the tips simply swollen, not dilated into regular disks. Outer metatarsals united.

Brazil.

This genus, perhaps, should be united with the following.

1. Thoropa miliaris.

Rana miliaris, *Spix, Spec. Nov. Test. Ran.* p. 30, pl. 6. f. 1.
? Cystignathus missiessii, *Eyd. & Soul. Voy. Bonite, Zool.* p. 148, pl. 10. f. 2.
? Thoropa missiessii, *Cope, Nat. Hist. Rev.* 1865, p. 110.
Ololygon abbreviatus, (*Fitz.*) *Steindachn. Novara, Amph.* p. 65, pl. 4. f. 16–18.
Hylodes abbreviatus, *Hensel, Arch. f. Naturg.* 1867, p. 151.
Ololygon miliaris, *Peters, Mon. Berl. Ac.* 1872, p. 206.

Vomerine teeth in two small groups a little behind the level of the choanæ. Head broad, flat; snout truncate; loreal region concave; interorbital space broad; tympanum about two thirds the diameter of the eye. First and second fingers equal; toes very long, indistinctly fringed; two moderately developed metatarsal tubercles. Limbs moderately elongate. Upper surfaces smooth or with a few very small warts; lower surfaces smooth, except the lower belly and the thighs, which are granulate. Flesh-coloured above, brown-marbled; limbs cross-barred. Male without vocal sac; during the breeding-season the inner side of the first two fingers furnished with blackish rugosities.

Brazil.

2. CHOROPHILUS[*].

Chorophilus, *Baird, Proc. Ac. Philad.* vii. 1854, p. 60; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Helocœtes, *Baird, l. c.*
Pseudacris, *Fitzing. Syst. Rept.* p. 31 (name only); *Günth. Cat.* p. 97; *Cope, Nat. Hist. Rev.* 1865, p. 110.
Acris, sp., *Dum. & Bibr.* viii. p. 509.
Cystignathus, sp., *Holbr. N.-Amer. Herp.* iv. p. 107; *Günth. Cat.* p. 29.

Pupil horizontal. Tongue oval or subcircular, entire or slightly nicked, and free behind. Vomerine teeth. Tympanum distinct. Fingers free; toes nearly free, the tips dilated into very small disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra very slightly dilated.

North America; Peru.

Synopsis of the Species.

I. Skin smooth above, or nearly so.

Vomerine teeth behind the level of the choanæ; tibio-tarsal articulation reaching the eye; back with longitudinal dark bands	1. *nigritus*, p. 333.
Tongue subcircular; back with oblong, dark, light-margined spots; limbs regularly cross-barred	2. *ornatus*, p. 333.
Head long, narrow; back immaculate	3. *ocularis*, p. 333.
Vomerine teeth behind the level of the choanæ; tibio-tarsal articulation not reaching the eye; back immaculate	4. *copii*, p. 334.
Vomerine teeth on a level with the hinder edge of the choanæ; tibio-tarsal articulation reaching the eye; back immaculate	5. *cuzcanus*, p. 334.
Vomerine teeth between the choanæ; tibio-tarsal articulation reaching the eye; back with longitudinal dark bands or series of spots	6. *triseriatus*, p. 335.

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[*] 1. *Helocœtes feriarum*, Baird, Proc. Ac. Philad. vii. p. 60.—Carlisle, Penna.

II. Dorsal region strongly tuberculate.

Tibio-tarsal articulation reaching beyond the eye; tympanum much smaller than the eye .... 7. *verrucosus*, p. 335.

Tibio-tarsal articulation not reaching the eye; tympanum nearly as large as the eye .... 8. *septentrionalis*, p. 335.

1. Chorophilus nigritus.

Pseudacris nigrita, part., *Günth. Cat.* p. 97.
Rana nigrita, *Leconte, Ann. Lyc. N. Y.* i. p. 282; *Harlan, Med. Phys. Res.* p. 105, *and Journ. Ac. Philad.* v. p. 341.
Acris nigrita, *Dum. & Bibr.* p. 509.
Cystignathus nigritus, *Holb. N.-Amer. Herp.* iv. p. 107, pl. 26.
Chorophilus nigritus, *Baird, Proc. Ac. Philad.* vii. p. 60; *Leconte, eod. loc.* p. 427.

Tongue oval, slightly nicked. Vomerine teeth in two slightly oblique groups behind the level of the choanæ. Head much longer than broad; snout acuminate, rather prominent, nearly twice as long as the diameter of the eye; canthus rostralis rather indistinct; interorbital space a little broader than the upper eyelid; tympanum half the diameter of the eye. Fingers and toes slender, latter with a slight rudiment of web; first finger shorter than second; subarticular tubercles small; no outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above, granulate beneath. Blackish ash above, with three interrupted black longitudinal bands; loreal and temporal regions black; upper lip white-margined, beneath whitish, immaculate.

South Carolina and Georgia.

a. ♀.	Georgia.

2. Chorophilus ornatus.

Cystignathus ornatus, *Holb. N.-Amer. Herp.* iv. p. 103, pl. 25.
Chorophilus ornatus, *Leconte, Proc. Ac. Philad.* vii. 1854, p. 428.

Tongue more rounded than in *C. nigritus*; hind limb shorter. Dove-colour above, with oblong spots of dark brown, margined with yellow; limbs transversely barred.

South Carolina and Georgia.

3. Chorophilus ocularis.

Hylodes ocularis, *Holb. N.-Amer. Herp.* iv. p. 137, pl. 35.
Hyla ocularis, *Leconte, Proc. Ac. Philad.* vii. 1854, p. 429.
Chorophilus angulatus, *Cope, Check-list N. Amer. Rept.* p. 30.

Vomerine teeth in two groups between the choanæ. Head long, narrow; snout pointed. Chestnut-brown or bronzed above; upper jaw white, which colour is continued to the anterior extremity; above this a black band runs over the shoulder and terminates on the flanks; abdomen yellowish white. Extremely small.

South Carolina.

4. Chorophilus copii.

Cystignathus ornatus, *Günth. Cat.* p. 29.
Chorophilus ocularis, *Cope, Check-list N.-Amer. Rept.* p. 30.

Tongue circular, entire. Vomerine teeth in two slightly oblique oval groups behind the level of the choanæ. Head slightly longer than broad; snout rounded, as long as the diameter of the orbit; canthus rostralis rather indistinct; interorbital space as broad as the upper eyelid; tympanum somewhat more than half the diameter of the eye. Fingers and toes moderate, the tips very indistinctly dilated; first finger shorter than second; toes with a slight rudiment of web; subarticular tubercles small; no outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tympanum. Skin smooth above, granulate on the belly. Olive above; sides with three black spots, viz. a streak from the eye to the shoulder, an oval spot in the middle of the side, and one or two smaller ones on the loin.

Georgia.

a. ♀. Georgia.

Mr. Cope considers this Frog specifically distinct from *C. ornatus*, and identifies it with *Hyla ocularis* of Daudin. The latter opinion I cannot share, as nothing in the French author's description and figure indicates the least analogy with this form. The toes are represented as half webbed in *H. ocularis*, and the digital expansions of *C. copii* are so slight that they would certainly have escaped Daudin's observation. Moreover the colour is quite different.

5. Chorophilus cuzcanus.

Chorophilus cuzcanus, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 37.

Form rather robust. Tongue discoid, openly notched behind. Vomerine teeth in two fascicles between the choanæ, their posterior borders projecting a little behind the posterior margins of the latter. Head wide, flat; snout obtusely rounded, a little longer than the diameter of the eye; canthus rostralis well marked but contracted; tympanum half the diameter of the eye. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the front of the orbit. Skin smooth above, granulate beneath. Upper surfaces dark olive, limbs paler; sides of the head to the tympanum dark, bordered above by a blackish line along the canthus rostralis, and below by a light labial border; beneath whitish.

Peru.

6. Chorophilus triseriatus.

Hyla triseriata, *Wied, Reise N. Amer.* i. p. 249, *and Nova Acta Leop. Carol.* xxxii. p. 118.
Helocœtes triseriatus, *Baird, Proc. Ac. Philad.* vii. 1854, p. 60.
—— clarkii, *Baird, l. c., and U.S. Mex. Bound. Surv., Rept.* p. 28, pl. 37. f. 4–9.
Chorophilus triseriatus, *Cope, Check-list N.-Amer. Rept.* p. 30.

Vomerine teeth between the choanæ. Head longer than broad. Limbs as in *C. nigritus*. Three or five longitudinal dark bands or series of spots.

United States—Central, Eastern, and Southern regions.

7. Chorophilus verrucosus.

Chorophilus verrucosus, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 87.

Tongue large and wide behind, faintly emarginate. Vomerine teeth in two groups near the line of the posterior border of the choanæ. Head narrow and acuminate; snout projecting acutely beyond the labial margin; canthus rostralis distinct, but obtusely rounded; tympanum one fourth the diameter of the orbit. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the nostril. Skin of dorsal region tubercular, smooth warts of large and small size being irregularly crowded over its entire surface; belly granulate. Colour above leaden, with three longitudinal rows of darker, light-edged spots, extending one on each side and one on the median line; they are each composed of a series of spots joined end to end; femur and tibia cross-barred; upper lip dark plumbeous, with a series of five white spots; a similar spot below the tympanum; inferior surfaces yellowish.

Florida.

8. Chorophilus septentrionalis. (Plate XXIII. fig. 1.)

Pseudacris nigrita, part., *Günth. Cat.* p. 97.

Tongue oval, slightly nicked. Vomerine teeth in two small groups behind the level of the choanæ. Head longer than broad; snout subacuminate, prominent, twice as long as the diameter of the eye; latter very small; canthus rostralis rather indistinct; interorbital space a little broader than the upper eyelid; tympanum nearly as large as the eye. Fingers and toes moderately slender, latter with a slight rudiment of web; first finger shorter than second; an indistinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the tympanum. Skin granulate above and beneath. Yellowish olive above, with five longitudinal dark bands—the median bifurcating on the sacral region, the outermost extending from the tip of the snout through the eye to the middle of the side; beneath whitish, immaculate. From snout to vent 25 millim.

Great Bear Lake.

a. ♀.	Great Bear Lake.	

Well distinguished from *C. triseriatus* by its shorter hind limbs.

3. ACRIS.

Acris, *Dum. & Bibr.* viii. p. 506; *Günth. Cat.* p. 71; *Cope, Nat. Hist. Rev.* 1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 86.

Pupil horizontal. Tongue heart-shaped, free behind. Vomerine teeth. Tympanum indistinct. Fingers free, toes extensively webbed, the tips dilated into very small disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra very slightly dilated.

North America.

1. Acris gryllus.

Acris gryllus, *Günth. Cat.* p. 71.
Rana gryllus, *Leconte, Ann. Lyc. N. Y.* i. p. 282; *Harlan, Med. Phys. Res.* p. 104.
—— dorsalis, *Harlan, l. c.* p. 105.
Acris gryllus, *Dum. & Bibr.* p. 507; *Leconte, Proc. Ac. Philad.* 1855, p. 28.
Hylodes gryllus, *Holbr. l. c.* pl. 33.
Acris acheta, *Baird, Proc. Ac. Philad.* 1855, p. 59.

Habit slender. Vomerine teeth in two oblique groups between the choanæ. Head elongate; snout acuminate, nearly twice as long as the diameter of the eye; interorbital space as broad as the upper eyelid. First finger a little shorter than second; toes two-thirds webbed; subarticular tubercles rather small; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or a little beyond. Skin smooth or slightly tuberculous, belly granulate. Coloration very variable; generally a large triangular dark-brown spot between the eyes; sometimes a light dorsal band. Male with a subgular vocal sac.

United States: the typical form confined to the Austro-riparian region, the var. *crepitans* to the Eastern and Central regions.

a. Hgr.	South Carolina.	Dr. Harlan [P.]. (As typical of *Rana dorsalis*.)
b–c. ♀ & hgr.	South Carolina.	
d. Many spec.: ♂, ♀, & hgr.	N. America.	Edward Doubleday, Esq. [P.].

Var. crepitans.

Hylodes gryllus, *Dekay, New York Faun., Rept.* p. 70, pl. 22.
Acris crepitans, *Baird, Proc. Ac. Philad.* 1855, p. 59; *Leconte, eod.*

loc. p. 426; *Baird, U.S. Mex. Bound. Surv., Rept.* p. 28, pl. 37. f. 14–17.

Differs by a stouter habit, the head being shorter, and the tibiotarsal articulation reaching hardly the tip of the snout. According to Mr. Cope (Check-list N.-Amer. Rept.) this form should not be specifically separated from the preceding, but both are considered subspecies.

e–h. ♂, ♀, & hgr. Philadelphia.

VAR. **bufonia.**

Resembles the preceding, but the head and back are covered with very large warts. Markings indistinct. Perhaps a species.

i. ♀. New Orleans.

4. HYLA*.

Hyla, sp., *Laur. Syst. Amph.* p. 32.
Calamita, sp., *Merr. Tent. Syst. Amph.* p. 169.
Calamites, *Fitzing. N. Class. Rept.* p. 38; *Wagl. Syst. Amph.* p. 200; *Tschudi, Class. Batr.* p. 72; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.
Hypsiboas, sp., *Wagl. l. c.* p. 200.
Auletris, *Wagl. l. c.* p. 201.
Hyas, *Wagl. l. c.* p. 201.
Scynax, *Wagl. l. c.* p. 201.
Sphænorhynchus, *Tschudi, l. c.* p. 71.
Hypsiboas, *Tschudi, l. c.*; *Cope, l. c.*
Lophopus, *Tschudi, l. c.* p. 73.
Trachycephalus, (*Bibr.*) *Tschudi, l. c.*; *Dum. & Bibr.* viii. p. 534; *Günth. Cat.* p. 117; *Cope, Nat. Hist. Rev.* 1865, p. 109, *and Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Dendrohyas, *Tschudi, l. c.* p. 74.
Ranoidea, *Tschudi, l. c.* p. 76; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Litoria, *Tschudi, l. c.* p. 77; *Dum. & Bibr.* p. 503; *Günth. Cat.* p. 96; *Cope, Nat. Hist. Rev.* 1865, p. 110.
Hyla, *Dum. & Bibr.* p. 542; *Günth. Cat.* p. 98; *Cope, Nat. Hist. Rev.*

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* 1. *Hyla delitescens*, Leconte, Ann. Lyc. N. Y. i. p. 281; Holbr. N.-Amer. Herp. iv. p. 129, pl. 32.—Georgia.

2. *Litoria americana*, Dum. & Bibr. p. 506.—New Orleans.

3. *Litoria marmorata*, A. Dum. Ann. Sc. Nat. 1853, p. 142; *Hyla thypósticta*, Cope, Proc. Amer. Philos. Soc. xi. 1869, p. 163.—Australia.

4. *Hyla gratiosa*, Leconte, Proc. Ac. Philad. vii. 1856, p. 146, pl. 4.—Georgia.

5. *Hyla castanea*, Steindachn. Novara, Amph. p. 62, pl. 3. f. 9–13.

6. *Litoria guttata*, Macleay, Proc. Linn. Soc. N. S. Wales, ii. p. 137.—Katow.

7. *Litoria dorsalis*, Macleay, loc. cit. p. 138.—Katow.

8. *Hyla pænulata*, Brocchi, Bull. Soc. Philom. (7) iii. p. 21.—Guatemala.

1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 86, & 1867, p. 200.
Centrotelma, *Burmeister, Erläuter. Faun. Bras.* p. 97; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.
Hylomedusa, *Burmeister, l. c.* p. 102.
Pelodryas, *Günth. Cat.* p. 119; *Cope, Nat. Hist. Rev.* 1865, p. 109.
Scytopis, *Cope, Proc. Ac. Philad.* 1862, p. 354; *Nat. Hist. Rev.* p. 109; *and Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Osteocephalus, (*Fitzing.*) *Steindachn. Arch. per la Zool.* ii. fasc. i. p. 77; *Cope, Nat. Hist. Rev.* 1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Acrodytes, *Cope, Nat. Hist. Rev.* 1865, p. 109.
Smilisca, *Cope, Proc. Ac. Philad.* 1865, p. 194.
Dryomelictes, *Cope, l. c.*
Cinclidium, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.
Chirodryas, *Keferst. Götting. Nachr.* 1867, p. 358.
Cophomantis, *Peters, Mon. Berl. Ac.* 1870, p. 651.
Cincloscopus, *Cope, Proc. Amer. Philos. Soc.* 1870, p. 554.
Plectrohyla, *Brocchi, Bull. Soc. Philom.* (7) i. p. 92.
Cauphias, *Brocchi, l. c.* p. 129.

Pupil horizontal. Tongue entire or slightly nicked, adherent or more or less free behind. Vomerine teeth. Tympanum distinct or hidden. Fingers free or more or less webbed; toes webbed, the tips dilated into larger or smaller disks. Outer metatarsals united or slightly separated. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra more or less dilated.

Cosmopolitan, except the Æthiopian Region; one species only in the Palæarctic and two in the Indian.

Synopsis of the Species.

I. American Species.

A. Derm of head not involved in cranial ossification.

1. Choanæ large; vomerine teeth in two strong series, forming together a /‾\, a ∩, or a ⌃.

a. Fingers half webbed, or more.

α. A projecting rudiment of pollex*.

Outer fingers entirely webbed; skin granulate above; heel with a triangular dermal appendage	1. *maxima*, p. 349.
Outer fingers half webbed; upper surfaces perfectly smooth	5. *faber*, p. 351.

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* This rudiment, in form of a tubercle or an acute claw on the inner side of the first digit, is produced by one or two phalanges which are perpendicular to the metacarpal of the pollex; in the majority of the species these phalanges are absent, or have the same direction as the metatarsals, and are therefore not distinguishable externally.

Outer fingers half webbed; upper surfaces with scattered tubercles; tympanum nearly two thirds the diameter of the eye	11. *pardalis*, p. 354.
Outer fingers two-thirds webbed; skin smooth above; heel with a very short triangular dermal appendage	16. *albomarginata*, p. 356.
Outer fingers half webbed; upper surfaces granulate; tympanum half the diameter of the eye, or rather less	19. *granosa*, p. 358.

β. No projecting rudiment of pollex.

Outer fingers half or two-thirds webbed; tympanum two thirds the diameter of the eye; the latter less than the length of the snout; heel with a triangular dermal appendage	2. *appendiculata*, p. 349.
Outer fingers half webbed; tympanum two thirds the diameter of the eye, which equals the length of the snout; heel with a triangular dermal appendage	3. *cryptomelas*, p. 350.
Outer fingers nearly entirely webbed; disks immensely large, the largest being twice the size of the tympanum	4. *vasta*, p. 351.
Outer fingers nearly two-thirds webbed; tympanum two thirds the diameter of the eye; upper surfaces with irregular tubercles; belly dark-spotted	12. *inframaculata*, p. 354.
Outer fingers entirely webbed; tympanum three fourths the diameter of the eye; heel with a triangular dermal appendage	13. *corticalis*, p. 355.
Outer fingers nearly entirely webbed; tympanum two thirds the diameter of the eye; upper surface covered with large and small warts	14. *tuberculosa*, p. 355.
Outer fingers nearly half webbed; tympanum as large as the eye; borders of fronto-parietals forming two strong ridges	28. *taurina*, p. 363.
Outer fingers nearly entirely webbed; tympanum three fourths the diameter of the eye; borders of fronto-parietals forming two strong ridges	29. *langsdorffii*, p. 364.

b. Fingers one-third webbed, or nearly so.

Tympanum two thirds the diameter of the eye; tibio-tarsal articulation reaching the tip of the snout or beyond............	6. *crepitans*, p. 352.
Tympanum two thirds the diameter of the eye; tibio-tarsal articulation not reaching the tip of the snout	7. *indris*, p. 353.
Tympanum two thirds the diameter of the	

eye; thumb an incurved unusually elongated osseous spur	8. *circumdata*, p. 353.
Tympanum one third the diameter of the orbit; digital dilatations small	10. *hypselops*, p. 353.
Upper eyelid very narrow	18. *xerophylla*, p. 358.
Tympanum hidden; heel with a short dermal spur	20. *punctillata*, p. 359.
Tympanum hidden; no tarsal spur	21. *punctatissima*, [p. 359.
Tympanum two thirds the diameter of the eye; canthus rostralis nearly straight; loreal region not very oblique; no distinct rudiment of pollex	26. *leprieurii*, p. 361.
Tympanum two thirds or three fourths the diameter of the eye; canthus rostralis curved; loreal region not very oblique; no distinct rudiment of pollex	27. *buckleyi*, p. 362.

c. Fingers with a slight rudiment of web.

Tympanum two thirds the diameter of the eye; latter very small; snout acute, more than twice the diameter of the eye.	9. *rostrata*, p. 353.
Tympanum half the diameter of the eye; no distinct rudiment of pollex	15. *alboguttata*, p. 356.
Tympanum half or two thirds the diameter of the eye; upper eyelid very narrow	17. *punctata*, p. 357.
Tympanum half the diameter of the eye; loreal region oblique; heel with a dermal spur	22. *fasciata*, p. 359.
Tympanum about two thirds the diameter of the eye; canthus rostralis straight	23. *boans*, p. 360.
Tympanum three fourths the diameter of the eye; tibia measuring a little more than the distance from axilla to vent	24. *lanciformis*, p. 361.
Loreal region nearly vertical; heel with a dermal spur	25. *spectrum*, p. 361.

d. Fingers quite free.

Tympanum three fourths the diameter of the eye; canthus rostralis straight	30. *planiceps*, p. 364.

2. Choanæ small; vomerine teeth forming a very open chevron, the point of which is turned forwards	51. *vauteri*, p. 376.

3. Vomerine teeth in two groups or short series, transverse or obliquely directed backwards and inwards; choanæ small or moderate (with a few exceptions).

a. Fingers more than one-third webbed.

a. The web reaching the disks of the second and fourth fingers.

Vomerine teeth between the choanæ; tympanum very small, rather indistinct; the web not reaching the disk of third finger	69. *pulverata*, p. 386.
Vomerine teeth between the choanæ; tympanum very distinct, about half the diameter of the eye; the web not reaching the disk of third finger; forearm and tarsus with a denticulated fringe	79. *senicula*, p. 391.
Vomerine teeth on a level with the hinder edge of the choanæ; tympanum very distinct, two thirds the diameter of the eye; the web reaching the disk of third finger; forearm and tarsus with a denticulated fringe	80. *marmorata*, p. 391.
Vomerine teeth a little behind the level of the choanæ; tympanum very distinct, nearly two thirds the diameter of the eye; the web not reaching the disk of third finger; skin thick, leathery, minutely pitted	35. *coriacea*, p. 367.
Vomerine teeth between the choanæ; tympanum distinct, half the diameter of the eye; the web not reaching the disk of third finger; tibio-tarsal articulation reaching the tip of the snout..........	43. *salvini*, p. 372.

β. The web not reaching the disks of the second and fourth fingers.

* Vomerine teeth on a level with the hinder edge of the choanæ, or a little beyond the latter.

Tympanum very distinct, half the diameter of the eye; tibio-tarsal articulation marking the front of the eye; skin thick, minutely pitted	34. *quadrangulum*, [p. 367.
Tympanum very small, indistinct; tibio-tarsal articulation marking the eye	68. *albopunctulata*, [p. 385.
Tympanum one third the diameter of the eye; tibio-tarsal articulation reaching the tip of the snout	71. *microps*, p. 386.
Tympanum about half the diameter of the eye; snout pointed, much projecting ..	73. *aurantiaca*, p. 388.

** Vomerine teeth in the middle between the choanæ.

Tympanum very distinct, less than half the diameter of the orbit; fingers half webbed, the disks about as large as the tympanum.	42. *gabbii*, p. 372.

Tympanum rather indistinct; canthus rostralis scarcely distinct; fingers half webbed	70. *reticulata*, p. 386.
Tympanum more or less distinct, half the diameter of the eye; fingers nearly two-thirds webbed; tibio-tarsal articulation reaching between the eye and the tip of the snout	72. *leucophyllata*, p. 387.
Tympanum perfectly distinct, somewhat more than half the diameter of the eye; snout not longer than the diameter of the orbit; tibio-tarsal articulation reaching the tip of the snout, or a little beyond	74. *bipunctata*, p. 389.
As in the preceding, but the snout a little longer than the diameter of the orbit	75. *minuta*, p. 389.
Tympanum rather indistinct, half the diameter of the eye; tibio-tarsal articulation reaching the eye; middle of the back rough with bony deposits	81. *dasynotus*, p. 392.
Tympanum one third the diameter of the eye; tibio-tarsal articulation reaching nearly the tip of the snout; fingers about two-thirds webbed	83. *sordida*, p. 393.
Tympanum nearly half the diameter of the eye; tibio-tarsal articulation reaching between the eye and the tip of the snout; fingers not quite half webbed	84. *nigripes*, p. 394.

b. Outer fingers one-third or one-fourth webbed.

a. Vomerine teeth in the middle between the choanæ.

Tympanum two thirds or three fourths the diameter of the eye; tibio-tarsal articulation reaching between the eye and the tip of the snout; a distinct tarsal fold	41. *baudinii*, p. 371.
Back covered with minute pustulations	46. *cadaverina*, p. 373.
Tympanum somewhat more than half the diameter of the eye; tibio-tarsal articulation marking the front of the eye; no distinct tarsal fold	54. *uranochroa*, p. 377.
Tympanum about two thirds the diameter of the eye; tibio-tarsal articulation reaching nearly the tip of the snout; canthus rostralis indistinct	76. *rhodopepla*, p. 389.
Tympanum one third the diameter of the eye; tibio-tarsal articulation reaching the tip of the snout; toes half webbed	77. *strigilata*, p. 390.
Tympanum extremely small, scarcely distinct; tibio-tarsal articulation reaching the tip of the snout	101. *miotympanum*, p. 400.

β. Vomerine teeth on a level with the hinder edge of the choanæ.

Tympanum about two thirds the diameter of the eye; tibio-tarsal articulation not reaching beyond the eye; no tarsal fold.	31. *venulosa*, p. 364.
Tympanum one third or one half the diameter of the eye; tibio-tarsal articulation not reaching beyond the eye; no tarsal fold.	32. *nigropunctata*, p. 366.
Tympanum two thirds the diameter of the eye; tibio-tarsal articulation reaching beyond the eye; a tarsal fold	33. *mesophæa*, p. 366.
Tympanum about two thirds the diameter of the eye; tibio-tarsal articulation reaching the tympanum or the posterior border of the eye; a tarsal fold........	44. *versicolor*, p. 372.
Tympanum two thirds the size of the eye; tibio-tarsal articulation reaching beyond the posterior border of the eye; a tarsal fold; body rough	45. *arenicolor*, p. 373.
Tympanum half the diameter of the eye; tibio-tarsal articulation reaching the tip of the snout	49. *zebra*, p. 375.
Tympanum about two thirds the diameter of the eye; tibio-tarsal articulation reaching the eye or slightly beyond; a tarsal fold; upper surfaces smooth	53. *carolinensis*, p. 377.

γ. Vomerine teeth behind the level of the choanæ.

Tympanum one third the diameter of the eye; snout elevated, vertically truncate.	82. *parviceps*, p. 393.
Tympanum one sixth the size of the eye; snout prominent, truncate; a distinct rudiment of pollex	85. *palliata*, p. 394.
Tympanum one third the diameter of the eye; snout rounded, as long as the diameter of the orbit; a distinct rudiment of pollex	86. *polytænia*, p. 394.
Tympanum less than one third the diameter of the eye; snout rounded, shorter than the diameter of the orbit	87. *rubicundula*, p. 395.

c. Outer fingers slightly webbed at the base, sometimes rather indistinctly.

α. Vomerine teeth in the middle between the choanæ.

Tympanum half the diameter of the eye; tibio-tarsal articulation reaching the tip of the snout; toes two-thirds webbed; snout not prominent	48. *fusca*, p. 374.

Tympanum half the diameter of the eye; toes two-thirds webbed; snout prominent.	52. *nasica*, p. 376.
Tympanum about one third the diameter of the eye; skin of upper surfaces minutely corrugated	56. *andersonii*, p. 378.
Tympanum half the diameter of the eye; tibio-tarsal articulation reaching the tympanum or the posterior border of the eye; toes not more than half webbed	57. *eximia*, p. 378.
Tympanum hidden; a claw-like rudiment of pollex	89. *guatemalensis*, p. 396.
Tympanum much smaller than the eye; toes half webbed; disks large	93. *nebulosa*, p. 397.
Tympanum hardly distinct, two fifths the diameter of the eye; tibio-tarsal articulation reaching beyond the tip of the snout	94. *labialis*, p. 397.
Tympanum half the diameter of the eye; tibio-tarsal articulation reaching nearly the tip of the snout; toes half webbed; hinder side of thighs uniform	96. *squirella*, p. 398.
Tympanum half the diameter of the eye; hinder side of thighs black, white-spotted.	97. *femoralis*, p. 398.
Tympanum half the diameter of the eye; tibio-tarsal articulation reaching between the eye and the tip of the snout; head much depressed; canthus rostralis very indistinct	106. *depressiceps*, p. 402.
Tympanum more than half the diameter of the eye; tibio-tarsal articulation reaching beyond the tip of the snout	107. *phæota*, p. 402.

β. Vomerine teeth on a level with the hinder edge of the choanæ, or slightly beyond the latter.

Tympanum half the diameter of the eye; tibio-tarsal articulation reaching the eye; toes half webbed	47. *regilla*, p. 374.
Tympanum about half the diameter of the eye; tibio-tarsal articulation reaching beyond the tip of the snout; toes two-thirds or three-fourths webbed	50. *pulchella*, p. 375.
Tympanum nearly half the diameter of the eye; tibio-tarsal articulation reaching the eye; toes half webbed; a distinct rudiment of pollex	88. *bracteator*, p. 395.
Tympanum two thirds the diameter of the eye; toes three-fourths webbed; canthus rostralis rounded	95. *auraria*, p. 397.

d. Outer fingers perfectly free.

a. Vomerine teeth in the middle between the choanæ, or on a level with the front edge of the latter.

Tympanum hidden; toes entirely webbed; skin of upper surfaces shagreened	90. *crassa*, p. 396.
Tympanum one third the diameter of the eye; toes half webbed; snout not projecting	91. *plicata*, p. 396.
Tympanum nearly as large as the eye; toes webbed at the base only; two bony spines above the tympanum	92. *spinosa*, p. 396.

β. Vomerine teeth on a level with the hinder edge of the choanæ, or beyond the latter.

Vomerine teeth opposite the posterior margin of the choanæ	55. *pulchrilineata*, [p. 378.
Vomerine teeth just behind the level of the choanæ; tympanum hardly visible; toes not quite half webbed	98. *pickeringii*, [p. 399.
Vomerine teeth behind the level of the choanæ; toes three-fourths webbed	104. *punctariola*, [p. 401.
Vomerine teeth behind the level of the choanæ; toes about half webbed; back warty	108. *spilomma*, p. 402.
Tympanum one third the diameter of the eye; toes half webbed; snout projecting	99. *curta*, p. 399.
Tympanum one fourth or one fifth the diameter of the eye; toes two-thirds webbed; tibio-tarsal articulation reaching the tip of the snout	100. *elæochroa*, p. 399.
Tympanum larger than the eye; toes webbed at the base only	102. *gracilipes*, p. 400.
Snout very prominent; toes half webbed; tibio-tarsal articulation marking the front of the orbit	103. *staufferi*, p. 400.
Tympanum one fifth the diameter of the eye; tibio-tarsal articulation reaching nearly the tip of the snout; tympanum overhung by a thick dermal fold	105. *bistincta*, p. 401.
Tympanum somewhat more than half the diameter of the eye; toes three-fourths webbed; tibio-tarsal articulation reaching between the eye and the tip of the snout; snout twice as long as the diameter of the eye	109. *acuminata*, p. 403.
Tympanum about half the diameter of the eye; toes three-fourths webbed; tibio-tarsal articulation reaching between the eye and the tip of the snout; snout once	

and a half or once and two thirds as long as the diameter of the eye .... 110. *rubra*, p. 403.

Tympanum half the diameter of the eye; toes three-fourths webbed; tibio-tarsal articulation reaching considerably beyond the tip of the snout; snout as long as the diameter of the eye .... 111. *funerea*, p. 404.

B. Derm of head involved in the rugose cranial ossification.

Outer fingers one-third webbed; vomerine teeth in a straight or slightly curved series on a level with the hinder edge of the choanæ........................ 36. *nigromaculata*, [p. 368.

Outer fingers slightly webbed .... 37. *septentrionalis*, [p. 368.

Outer fingers nearly half webbed; head as long as broad .... 38. *ovata*, p. 369.

Outer fingers one-third webbed; head broader than long; choanæ very large.. 39. *dominicensis*, [p. 370.

Outer fingers one-third webbed; posterior border of casque raised; choanæ very large .... 40. *lichenata*, p. 370.

II. Palæarctic and Indian Species.

Vomerine teeth between the choanæ; no spots on sides of thighs .... 58. *arborea*, p. 379.

Vomerine teeth on a level with the hinder edge of the choanæ; sides of body and thighs with deep black spots.......... 59. *chinensis*, p. 381.

Vomerine teeth on a level with the hinder edge of the choanæ; a strong tuberculated fold from the eye to the shoulder; groin and sides of thighs with deep black spots 60. *annectens*, p. 382.

III. Australian Species.

A. Fingers at least one-third webbed.

Outer fingers extensively webbed, the membrane reaching the disks of the second and fourth; head and back granulate .. 62. *gracilenta*, p. 383.

Fingers one-third webbed; a distinct parotoid. 64. *cærulea*, p. 383.

Fingers half webbed, disks larger than the tympanum; tibio-tarsal articulation reaching the tip of the snout or beyond . 65. *dolichopsis*, p. 384.

Fingers half webbed, disks much smaller than the tympanum; tibio-tarsal articulation reaching beyond the tip of the snout .... 66. *infrafrenata*, [p. 385.

Fingers half-webbed; tympanum small .. 67. *montana*, p. 385.

Fingers half webbed or nearly so; canthus rostralis rounded; groin and sides of thighs black-marbled .... 78. *peronii*, p. 390.

B. Fingers free or webbed at the base.

1. Vomerine teeth behind the level of the choanæ.

Vomerine teeth in two very small groups; fingers with a distinct web; toes three-fourths webbed; uniform greenish above.	61. *phyllochroa*, [p. 382.
Vomerine teeth in two groups close together; fingers free or with a slight rudiment of web; toes two-thirds or three-fourths webbed: tibio-tarsal articulation not reaching the eye	112. *rubella*, p. 405.
As in the preceding, but a very distinct web between the fingers	113. *congenita*, p. 406.
Vomerine teeth arranged in two small arches; fingers webbed at the base; toes three-fourths webbed; tibio-tarsal articulation not reaching the eye	114. *dentata*, p. 406.
Vomerine teeth in two oblique groups; fingers free; toes half webbed; tibio-tarsal articulation reaching between the eye and the tip of the snout	119. *citropus*, p. 408.
Vomerine teeth in two round groups; fingers free; toes entirely webbed; tibio-tarsal articulation reaching beyond the tip of the snout	125. *obtusirostris*, [p. 412.

2. Vomerine teeth between, or on a level with the front edge of, the choanæ.

a. No outer metatarsal tubercle.

α. Toes half or two-thirds webbed.

Tympanum half or three fifths the diameter of the eye; fingers with a slight rudiment of web; tibio-tarsal articulation not reaching beyond the eye	115. *ewingii*, p. 406.
Tympanum one third the diameter of the eye; vomerine teeth hardly distinguishable	117. *parvidens*, p. 407.
Tympanum half the diameter of the eye; snout not longer than the eye; canthus rostralis rounded	120. *thesaurensis*, [p. 409.
Tympanum half the diameter of the eye; snout a little longer than the eye; canthus rostralis distinct; tibio-tarsal articulation reaching beyond the tip of the snout	121. *impura*, p. 409.
Tympanum half the diameter of the eye; snout slightly longer than the diameter	

of the eye; canthus rostralis rounded; a strong fold across the chest .... 122. *vagabunda*, p. 410.

Tympanum not quite one third the diameter of the eye; snout acuminate; canthus rostralis angular; tibio-tarsal articulation reaching beyond the tip of the snout .. 123. *arfakiana*, p. 410.

β. Toes more than two-thirds webbed, the membrane reaching the disks of the third and fifth toes.

A distinct web between the fingers; a small glandular fold from the angle of the mouth .... 63. *jervisiensis*, p. 483.

A distinct web between the fingers; snout not longer than the diameter of the eye. 116. *krefftii*, p. 407.

An indistinct web between the fingers; snout considerably longer than the diameter of the eye; canthus rostralis angular; loreal region nearly vertical .... 118. *adelaidensis*, p. 408.

Fingers quite free; snout considerably longer than the diameter of the eye; interorbital space narrower than the upper eyelid .... 124. *aurea*, p. 410.

b. A small outer metatarsal tubercle; disks of fingers and toes very small; fingers free, first as long as, or longer than, second.

Skin of back smooth; first and second fingers equal; tibio-tarsal articulation reaching the tip of the snout or beyond .... 126. *lesueurii*, p. 412.

Skin of back smooth; first finger extending slightly beyond second; tibio-tarsal articulation reaching far beyond the tip of the snout .... 127. *nigrofrenata*, p. 413.

Skin of back smooth; first finger a little longer than second; tibio-tarsal articulation reaching the nostril or the tip of the snout; toes about half webbed .... 128. *affinis*, p. 413.

Skin of back smooth or nearly so; first finger a little longer than second; tibio-tarsal articulation reaching beyond the tip of the snout; tympanum nearly as large as the eye .... 129. *latopalmata*, p. 414.

Skin of back warty; first and second fingers equal; tibio-tarsal articulation reaching beyond the tip of the snout .... 130. *freycineti*, p. 414.

Back with numerous longitudinal folds .. 131. *nasuta*, p. 415.

A narrow glandular lateral fold; toes nearly entirely webbed .... 132. *dimolops*, p. 415.

1. Hyla maxima.

Hyla langsdorffii, *Günth. Cat.* p. 98.
Seba, i. t. 72. f. 3.
Rana maxima, *Laur. Syn. Rept.* p. 32.
Calamita maxima, *Schneid. Hist. Amph.* p. 163.
Hyla palmata, *Daud. Rain.* p. 38, pl. 14, *and Rept.* viii. p. 79.
—— geographica, *Spix, Spec. Nov. Test. Ran.* p. 39, pl. 11. f. 1.
Calamita palmatus, *Merr. Tent.* p. 173.
Hypsiboas palmata, part., *Wagl. Syst. Amph.* p. 200; *Tschudi, Batr.* p. 73.
—— geographica. part., *Wagl. l. c.*
Hyla palmata, part., *Dum. & Bibr.* p. 545.
—— (Centrotelma) langsdorffii, *Burmeist. Erläuter. Faun. Bras.* p. 100.
Cinclidium granulatum, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 202.
Hyla maxima, *Peters, Mon. Berl. Ac.* 1872, p. 218.

Tongue subcircular, entire, adherent. Vomerine teeth between the very large choanæ, in two angular series, forming together a /‾\-like figure. Head large, depressed, a little broader than long; snout subacuminate, nearly twice as long as the diameter of the eye; loreal region very oblique, concave; canthi rostrales angular, forming with the raised borders of the fronto-parietals a lozenge-shaped figure; crown concave; the greatest width of the interorbital space measures twice the width of the upper eyelid; tympanum very distinct, two thirds or three fifths the width of the eye. Three outer fingers entirely webbed; a distinct rudiment of pollex; toes entirely webbed; disks of fingers and toes smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches to the tip of the snout, or to between that point and the eye. Upper surfaces minutely granulate; belly and lower surface of thighs covered with large granules; a slight dermal fold along the outer edge of the forearm and of the tarsus; heel with a short triangular dermal appendage. Brown or reddish above, variegated with lighter and darker; limbs generally with dark cross bars; sometimes a dark vertebral line from end of snout to sacrum; lower surfaces whitish, immaculate, the male's throat brown. Male with an internal subgular vocal sac. From snout to vent 117 millim.

Guianas; Brazil.

a–b, c. ♂ ♀.	Demerara Falls.	
d. ♂.	Brit. Guiana.	Sir R. Schomburgk [P.].
e. ♂, skeleton.	Brit. Guiana.	
f. ♀.	——?	

2. Hyla appendiculata. (PLATE XXIII. fig. 2.)

Hyla geographica, *Günth. Cat.* p. 99.
Hyla (Centrotelma) geographica, *Burmeist. Erläuter.* p. 99.

Tongue subcircular, entire or slightly nicked, adherent. Vomerine teeth between the very large choanæ, in two series, forming together a /‾\ or a ^. Head large, depressed, a little broader than long; snout subacuminate, about once and a half as long as the diameter of the eye; loreal region very oblique, slightly concave; canthus rostralis distinct; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the width of the eye. Outer fingers half or two-thirds webbed; no distinct rudiment of pollex; toes entirely webbed, or nearly so; disks of fingers and toes much smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so far. Upper surfaces minutely granulate; belly and lower surfaces of thighs covered with large granules; heel with a short, triangular dermal appendage. Reddish brown above, uniform or marbled with blackish; frequently an X-shaped marking on the anterior part of the back; hind limbs with narrow cross bars; heel generally with a whitish spot; sides of body nearly always with vertical blackish lines; lower surfaces whitish, immaculate, or with small brown spots on the belly. Male with an internal subgular vocal sac, and brown rugosities on the inner side of the first digit during the breeding-season. From snout to vent 68 millim.

Brazil; E. Ecuador.

a. ♀.	Bahia.	
b–d. ♂ ♀.	Santarem.	H. A. Wickham, Esq. [C.].
e. ♂.	Interior of Brazil.	
f. ♂.	Brazil.	
g–i. ♂ ♀.	Canelos, Ecuador.	Mr. Buckley [C.].
k. ♀.	Sarayacu, Ecuador.	Mr. Buckley [C.].

3. Hyla cryptomelas.

Centrotelma cryptomelan, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 204.

Tongue subcircular or suboval, entire, adherent. Vomerine teeth between the large choanæ, in two series, forming together a /‾\ or a ^. Head moderate, depressed, a little broader than long; snout rounded, as long as the diameter of the eye; loreal region very oblique, slightly concave; canthus rostralis distinct; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the width of the eye. Three outer fingers half webbed; no distinct rudiment of pollex; toes three-fourths webbed; disks of fingers and toes much smaller than the tympanum; subarticular tubercles moderately developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so far. Skin smooth, belly and lower surface of thighs granulate; heel with a short triangular dermal appendage. Reddish brown above, punctated with black. In specimen *a*, the sides of the body, the arm and inner side of forearm, the thigh (except a narrow brown band along its upper surface and a white zone on the inner two thirds of its lower surface), the lower surface of tibia and tarsus, and the hands and feet (with the exception of the outer finger and toe) deep black; in specimen *b*, the sides of the body are marbled with blackish, and the black of the limbs not so intense, the hind limbs are distinctly cross-barred with darker; the other specimens are intermediate between these two extremes. Lower surfaces white, immaculate. Male with an internal subgular vocal sac, and brown rugosities on the inner side of the first digit during the breeding-season. From snout to vent 42 millim.

Bahia; E. Ecuador.

a, b, c. ♂.	Canelos, Ecuador.	Mr. Buckley [C.].
d. ♂.	Sarayacu, Ecuador.	Mr. Buckley [C.].

4. Hyla vasta.

Hyla vasta, *Cope, Proc. Ac. Philad.* 1871, p. 219.

Vomerine teeth in two rather long transverse arches opposite the posterior margin of the choanæ. Head broad; snout short, rounded; canthus rostralis well marked, concave; vertex strongly concave; tympanum one fourth the area of the eye. Fingers and toes nearly entirely webbed; no projecting rudiment of pollex; disks immensely large, the largest being twice the size of the tympanum. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Skin covered everywhere with small warts, which are indistinct or obsolete on the median upper surfaces of body and limbs; lower surfaces areolate-warty; fore-arm and tarsus bordered by a dermal fold behind, which has a scalloped thickened margin; some small dermal flaps near the vent. Colour above smoky grey, blackish on the head, with a brown band between the eyes; inner surfaces dirty flesh-colour, femur with three or four dusky cross bands, unspotted behind; throat black-spotted. From snout to vent 126 millim.

San Domingo, W. Indies.

5. Hyla faber.

Hyla maxima, *Günth. Cat.* p. 99.
Hyla faber, *Wied, Reise Bras.* ii. p. 249, *and Beitr.* i. p. 519, *and Abbild.*; *Peters, Mon. Berl. Ac.* 1872, p. 218.
—— geographica, var., *sive* semilineata, *Spix, Spec. Nov. Test. Ran.* p. 40, pl. 11. f. 2.
Hypsiboas geographica, part., *Wagl. Syst. Amph.* p. 200.
—— faber, *Wagl. l. c.*
Hyla palmata, part., *Dum. & Bibr.* p. 545.
—— palmata, *Burmeist. Erläuter.* p. 102.
—— maxima, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 183; *Hensel, Arch. f. Naturg.* 1867, p. 156.

Tongue subcircular, entire or indistinctly nicked, adherent. Vomerine teeth between the very large choanæ, in two arched or angular series, forming together a ∩ or a /‾\. Head rather large, depressed, broader than long; snout rounded, once and a half as long as the diameter of the eye; loreal region very oblique, concave; canthus rostralis distinct; crown concave; the greatest width of the interorbital space measures once and a half the width of the upper eyelid; tympanum very distinct, two thirds the width of the eye. Three outer fingers half webbed; a distinct rudiment of the pollex; toes nearly entirely webbed; disks of fingers and toes smaller than the tympanum; subarticular tubercles very prominent; a slight fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or somewhat beyond. Upper surfaces perfectly smooth; belly and lower surface of thighs covered with large granules; a curved fold from the upper eyelid to the shoulder. Light brown above, generally marbled with darker; hind limbs with dark cross bars; generally a dark vertebral line from end of snout to sacrum; lower surfaces whitish, immaculate, the male's throat brown. Male with an internal subgular vocal sac. From snout to vent 90 millim.

Brazil.

a–b. ♀.	Brazil.	
c. ♂.	S. America.	
d. Yg.	Brazil.	H. W. Bates, Esq. [C.].

6. **Hyla crepitans.**

Hyla pardalis, *Günth. Cat.* p. 99.
Hyla doumercii, *Günth. l. c.* p. 101.
Hyla levaillantii, *Günth. l. c.* p. 102.
Hyla crepitans, *Wied, Beitr. Naturg. Bras.* p. 525, *and Abbild.*; *Peters, Mon. Berl. Ac.* 1872, p. 212, & 1873, p. 612.
Hypsiboas crepitans, *Wagl. Syst. Amph.* p. 200.
Hyla palmata, part., *Dum. & Bibr.* p. 545.
—— doumercii, *Dum. & Bibr.* p. 551.
—— levaillantii, *Dum. & Bibr.* p. 550.
—— (Hylomedusa) crepitans, *Burmeist. Erläuter.* p. 103.
—— pugnax, *Schmidt, Denkschr. Ac. Wien*, 1858, p. 243, pl. i. f. 5 & 6; *Reinh. & Lütk. Vidensk. Meddel.* 1866, p. 193.
Hypsiboas doumercii, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 201.
—— levaillantii, *Cope, l. c.* p. 200.
—— pugnax, *Cope, l. c.*

Very closely allied to *H. faber*. Fingers one-third or one-fourth webbed. Sides of body and hinder sides of thighs with vertical dark stripes. From snout to vent 72 millim.

S. America.

a. ♂.	Bogotá.	
b, c–d, e–f. ♀ & hgr.	Venezuela.	Mr. Dyson.
g, h. ♀.	Demerara.	Dr. Hancock [P.].
i. ♀.	Surinam.	Mr. Bartlett [C.].
k–n. ♂ ♀.	Garanhuns, Pernambuco.	W. A. Forbes, Esq. [P.].
o. ♀.	Barakela.	Mr. Ripon.

7. Hyla indris.

Hypsiboas indris, *Cope, Proc. Amer. Philos. Soc.* 1870, p. 555.

Distinguished from *H. crepitans* in having shorter hind limbs.
Surinam.

8. Hyla circumdata.

Hypsiboas circumdatus, *Cope, Proc. Amer. Philos. Soc.* 1870, p. 555.

Vomerine series oblique, scarcely curved. Canthus rostralis little marked. Tympanum two thirds ocular opening. Palmation of hand to middle antepenultimate phalange of longest finger; thumb an incurved, unusually elongate, osseous spur. Femoral bands ten, blackish, very narrow, and nearly surrounding the leg; seven broader bands across the tibia.

Differs from *H. crepitans* in its stouter form and much stouter feet and hands and different coloration.

Brazil.

9. Hyla rostrata.

Hyla rostrata, *Peters, Mon. Berl. Ac.* 1863, p. 466.

Tongue very large, heart-shaped, broad, slightly nicked behind. Vomerine teeth between the very large choanæ, in two series forming a /‾\. Head longer than broad; snout flat, prominent, acute, more than twice as long as the diameter of the eye; canthus rostralis distinct, concave; loreal region flat; eye very small; tympanum distinct, two thirds the diameter of the eye. Fingers with a slight rudiment of web; toes nearly entirely webbed; disks of fingers well developed, broader than long, a little larger than those of the toes; subarticular tubercles well developed; a prominent tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper surfaces with scattered small tubercles; a few longitudinal folds on the back; belly separated from the sides of the body and from the chest by a prominent fold; lower surfaces granulate. Light brown above, with darker markings; a triangular spot between the eyes; limbs cross-barred; sides of the thighs with blackish vertical bars; a curved line above the tympanum, black; yellowish beneath; throat brown. From snout to vent 40 millim.

Caracas.

10. Hyla hypselops.

Hypsiboas hypselops, *Cope, Proc. Amer. Philos. Soc.* 1870, p. 554.

Vomerine teeth in two arched series, as in *H. crepitans*. Tongue broad. Head broad and flat; snout rather elongate, acuminate; canthus rostralis distinct, very concave; eye very large; tympanum one third the diameter of the orbit. Fingers not webbed beyond the basis of the proximal phalanges; a projecting rudiment of pollex; digital dilatations small. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches a little beyond the tip of the snout. Skin smooth above; a slightly prominent spur on the heel. Colour above bright chestnut-brown, below pale violet; no marks on the head or back; sides of body, front and back of thighs, and intero-anterior face of femur with vertical black bands; upper surface of hind limbs with faint cross bars. From snout to vent 56 millim.

Distinguished from *H. crepitans* by its acuminate snout, larger eye, and anterior femoral bands.

Pebas, Ecuador.

11. **Hyla pardalis.**

Hyla pardalis, *Spix, Spec. Nov. Test. Ran.* p. 34, pl. 8. f. 3; *Peters, Mon. Berl. Ac.* 1872, p. 208.
—— (Centrotelma) lundii, *Burmeist. Erläuter.* p. 101, pl. 31. f. 5.
—— pustulosa, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 192.

Tongue circular, slightly nicked behind, nearly entirely adherent. Vomerine teeth between the rather large choanæ, in two oblique series forming a chevron, the point of which is turned forwards. Head depressed, broader than long; snout rounded, a little longer than the diameter of the orbit; canthus rostralis moderately distinct; loreal region concave; interorbital space broader than the upper eyelid; tympanum nearly two thirds the diameter of the eye. Three outer fingers half webbed; a distinct rudiment of pollex; toes nearly entirely webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin of head and back with scattered tubercles; lower surfaces granulate; a slight fold along the outer edge of forearm and tarsus. Brownish above, dotted and marbled with darker; limbs more or less distinctly cross-barred; more or less distinct vertical dark bars on the sides of the body and sometimes on the sides of the thighs (the unique specimen at my disposal does not show any on the latter parts); beneath white, immaculate. From snout to vent 65 millim. (Specimen figured by Burmeister).

Brazil.

a. Hgr.	Brazil.

12. **Hyla inframaculata.** (PLATE XXIII. fig. 3.)

Tongue circular, entire, adherent. Vomerine teeth on a level with the hinder edge of the rather large choanæ, in two slightly curved series, forming together an arch the convexity of which is turned forwards. Head moderate, depressed, a little broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis very indistinct; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Three outer fingers nearly two-thirds webbed; no prominent rudiment of pollex; toes entirely webbed; disks of fingers half the diameter of the tympanum, of toes a little smaller; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Head and back covered with small, irregular tubercles; beneath granulate. Grey above, indistinctly marbled with darker; sides of body and thighs and lower surface of hind limbs black- and white-marbled; lower surface of head and body whitish, brown-spotted. From snout to vent 44 millim.

Amazons.

a. ♀.	Santarem.	H. A. Wickham, Esq. [C.]

13. **Hyla corticalis.**

Hyla corticalis, *Günth. Cat.* p. 105.
Hyla (Lophopus) corticalis, *Burmeist. Erläuter.* p. 95, pl. 30. f. 7–12
—— corticalis, *Peters, Mon. Berl. Ac.* 1872, p. 682.

Tongue circular, slightly nicked, and scarcely free behind. Vomerine teeth in two oblique, slightly curved series behind the level of the rather large choanæ, convergent towards front. Head broader than long; snout rounded, about once and a half as long as the diameter of the orbit; canthus rostralis blunt; loreal region slightly concave; interorbital space broader than the upper eyelid; tympanum very distinct, three fourths the diameter of the eye. Three outer fingers webbed to the disks; no projecting rudiment of pollex; toes entirely webbed; disks of fingers a little smaller than the tympanum; subarticular tubercles small. The hind limb being carried forwards along the body, the tibio-tarsal marks the tip of the snout. Upper surfaces minutely tubercular; lower surfaces granulate; a denticulated fringe along the outer side of forearm and tarsus and near the vent; heel with a triangular dermal process. Brownish above, indistinctly variegated with darker; sides of body and of thighs with vertical dark lines; whitish beneath, immaculate. From snout to vent 69 millim.

Brazil.

a. ♀.	Rio Janeiro.	A. Fry, Esq. [P.].

14. **Hyla tuberculosa.** (Plate XXIV. fig. 1.)

Tongue circular, entire, scarcely free behind. Vomerine teeth in two oblique series convergent towards front, behind the level of the large choanæ. Head much depressed, broader than long; snout rounded, the tip truncate, a little longer than the diameter of the orbit; canthus rostralis very distinct, strongly curved; loreal region concave; interorbital space much broader than the upper eyelid, slightly concave; tympanum very distinct, two thirds the diameter of the eye. Second and fourth fingers webbed to the disks, third to penultimate phalange; no projecting rudiment of pollex; toes entirely webbed; disks of fingers larger than the tympanum, of toes smaller; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. The whole of the upper surfaces covered with small warts, intermixed with large ones; lower surfaces granulate; a denticulated fringe along the outer side of forearm, outer finger, tarsus, and outer toe. Light reddish brown above, indistinctly spotted with darker; limbs with a few chestnut-brown cross bars; beneath whitish, immaculate. From snout to vent 67 millim.

Ecuador.

a. ♀.	Canelos.	Mr. Buckley [C.].

15. **Hyla alboguttata.** (Plate XXIII. fig. 4.)

Tongue subcircular, indistinctly nicked, and slightly free behind. Vomerine teeth between the large choanæ, in two oblique series, forming together a chevron the point of which is turned forwards. Head moderate, rather depressed, as long as broad; snout rounded, slightly longer than the diameter of the orbit; canthus rostralis distinct; loreal region concave; interorbital space as broad as the upper eyelid; tympanum very distinct, half the diameter of the eye. Fingers with a very slight rudiment of web; no projecting rudiment of pollex; toes two-thirds webbed; disks of fingers nearly as large as the tympanum, of toes smaller; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the front of the eye, or between the eye and the tip of the snout. Skin smooth above, granulate beneath. Light brown above, with small blackish spots; upper lip white-margined; flanks and upper surface of thighs with small round white spots, absent in one specimen; beneath whitish, with dark reticulation. From snout to vent 45 millim.

Ecuador.

a–b. ♀.	Sarayacu.	Mr. Buckley [C.].
c. ♀.	Canelos.	Mr. Buckley [C.].

16. **Hyla albomarginata.**

Hyla albomarginata, *Günth. Cat.* p. 98.

Hyla albomarginata, *Spix, Spec. Nov. Test. Ran.* p. 33, pl. 8. f. 1; *Dum. & Bibr.* p. 555; *Reinh. & Lütk. Vidensk. Meddel.* 1861 p. 186; *Steindachn. Novara, Amph.* p. 57; *Peters, Mon. Berl. Ac.* 1872, p. 208.

—— infulata, *Wied, Beitr. Naturg. Bras.* i. p. 533; *Burmeist. Erläuter.* p. 97, pl. 30. f. 1–6.

—— punctata, *Wied, Abbild.*

Hypsiboas albomarginata, *Wagl. Syst. Amph.* p. 201.

Tongue subcircular, entire or slightly nicked, adherent. Vomerine teeth between the large choanæ, in two series, forming together a /‾\ or a ⌃. Head moderate, a little broader than long; snout rounded sometimes rather acuminate, once and a half as long as the diameter of the eye ; loreal region oblique, not concave ; canthus rostralis moderately distinct ; eye very prominent ; upper eyelid narrow ; interorbital space much broader than the latter ; tympanum distinct, about half the diameter of the eye. Three outer fingers two-thirds webbed ; a slight rudiment of pollex ; toes nearly entirely webbed ; disks of fingers as large as the tympanum, of toes smaller ; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so. Skin smooth, granulate on the belly and under the thighs ; a narrow glandular lateral fold, beginning from the eye, not extending as far as sacrum ; heel with a very short, triangular, dermal appendage. Yellowish or light reddish brown above, closely and minutely punctulated with brown ; beneath immaculate. Male with an external subgular vocal sac. From snout to vent 60 millim.

Brazil.

a. ♀.	Para.	
b. ♀.	Bahia.	Dr. O. Wucherer [P.].
c. ♀.	Bahia.	
d. ♂.	Rio Janeiro.	A. Fry, Esq. [P.].
e. ♀.	Rio Janeiro.	Dr. Cunningham [C.].
f. ♀.	Brazil.	
g. ♀.	Brazil.	C. Darwin, Esq. [P.].

17. Hyla punctata.

Hyla punctata, *Günth. Cat.* p. 101.
Calamita punctata, *Schneid. Hist. Amph.* p. 170.
Hyla punctata, *Daud. Rain.* p. 41, *and Rept.* viii. p. 81 ; *Gravenh. Delic.* p. 30, pl. 6. f. 2 ; *Dum. & Bibr.* p. 552 ; *Burmeist. Erläuter.* p. 101 ; *Peters, Mon. Berl. Ac.* 1871, p. 403, & 1872, pp. 208 & 214 ; *Günth. Proc. Zool. Soc.* 1872, p. 662.
—— papillaris, *Spix, Spec. Nov. Test. Ran.* p. 34, pl. 8. f. 2.
—— variolosa, *Spix, l. c.* p. 37, pl. 9. f. 4.
Hypsiboas punctatus, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 201.
Hyla rhodoporus, *Günth. Proc. Zool. Soc.* 1868, p. 488, pl. 37. f. 4.

Tongue subcircular, entire, adherent. Vomerine teeth between the large choanæ, in two series, forming together a /‾\ or a ⌃. Head moderate, a little broader than long ; snout rounded, once and a half as long as the diameter of the eye ; canthus rostralis distinct ; loreal region oblique, scarcely concave ; eye very prominent ; upper eyelid narrow ; interorbital space broader than the latter ; tympanum distinct, half or two thirds the diameter of the eye. Three outer fingers slightly webbed ; a slight rudiment of pollex ; toes three-fourths webbed ; disks of fingers and toes smaller than the tympanum ; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so. Skin smooth, granulate on the belly and under the thighs. Light olive or greyish above, minutely dotted with rose or white ; upper eyelid rose or white ; generally a lateral streak and a few round spots on the back white ;

beneath immaculate. Male with an external subgular vocal sac. From snout to vent 38 millim.

Surinam; Brazil.

a. ♀.	Surinam.	Mr. Bartlett [C.].
b. ♀.	Surinam.	Herr Kappler [C.].
c. ♂.	Bahia.	Dr. Wucherer [C.].
d. ♀.	Upper Amazon.	Mr. Bartlett [C.]. (Type of *Hyla rhodoporus*.)
e. ♀.	——?	

18. **Hyla xerophylla.**

Hyla xerophylla, *Dum. & Bibr.* p. 549; *Peters, Mon. Berl. Ac.* 1873, p. 613.
Hypsiboas xerophyllum, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.

Very closely allied to *H. punctata*, from which it differs by the greater development of the web between the fingers (these being one-third webbed), and the presence of vertical brown bars on the sides of the body and the hinder side of the thighs. From snout to vent 47 millim.

Cayenne; Surinam; Nicaragua.

a. ♀. ——?

19. **Hyla granosa.** (Plate XXIV. figs. 2 & 3.)

Tongue subcircular, entire, adherent. Vomerine teeth between the large choanæ, in two oblique series, forming together a chevron, the point of which is turned forwards. Head moderate, broader than long; snout rounded, once and a half as long as the diameter of the eye; canthus rostralis rather indistinct; loreal region oblique, slightly concave; eye very prominent; upper eyelid narrow; interorbital space much broader than the latter; tympanum distinct, half or not quite half the diameter of the eye. Three outer fingers half webbed or nearly so; a rudiment of pollex, slight in females, clawlike in males; toes three-fourths webbed; disks as large as, or nearly as large as, the tympanum; subarticular tubercles little developed. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches the tip of the snout. Upper surfaces, belly, and lower surface of thighs granulate. Colourless; males with a few scattered white dots on the head and back; females with a cross-streak between the eyes, a streak from the nostril, and a few spots on the back, forearms, and tibiæ, purple; upper eyelid rose, as in *H. punctata*. Male with an external gular vocal sac. From snout to vent 40 millim.

Guianas; N. Brazil; Ecuador.

a. ♀.	Demerara Falls.	
b-d. ♂.	Santarem.	H. A. Wickham, Esq. [C.].
e,f. ♀.	Interior of Brazil.	
g ♂.	Canelos, Ecuador.	Mr. Buckley [C.].

20. Hyla punctillata.

Cophomantis punctillata, *Peters, Mon. Berl. Ac.* 1870, p. 651.
Hyla punctillata, *Peters, eod. loc.* 1872, p. 211.

Tongue heart-shaped. Vomerine teeth between the large choanæ, in two oblique series converging towards the front, their hinder extremities extending beyond the level of the choanæ. Head moderate; snout a little longer than the diameter of the eye, the end truncate; loreal region rather high; canthus rostralis rounded; no tympanic disk, eustachian tubes extremely minute. Outer fingers one-third webbed; toes two-thirds webbed; disks moderate. Skin smooth, granulate on the belly and under the thighs; a fold from the eye to the shoulder; heel with a short dermal spur. Bluish-grey above, closely and minutely punctulated with darker; this pigment forms a narrow streak on the femur; concealed surfaces blackish brown. From snout to vent 28 millim.

Brazil.

21. Hyla punctatissima.

Hylella punctatissima, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 200, pl. 4. f. 5.
Hyla punctatissima, *Peters, Mon. Berl. Ac.* 1872, p. 211.

Closely allied to the preceding. The snout is shorter, the eustachian tubes are more distinct, the tibio-tarsal spur is absent, the ground-colour is brown, and the punctulation larger. From snout to vent 21 millim.

Brazil.

22. Hyla fasciata.

Hyla fasciata, *Günth. Cat.* p. 100, pl. vii. f. B.
? Hyla calcarata, *Troschel, in Schomb. Reis. Brit. Guian.* iii. p. 660.
Hypsiboas fasciatus, *Cope, Proc. Ac. Philad.* 1862, p. 354.
—— calcaratus, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.

Tongue subcircular, slightly nicked, adherent. Vomerine teeth between the large choanæ, in two arched series, forming together a ∩. Head moderate, as long as broad, depressed; snout subacuminate, a little longer than the diameter of the orbit; loreal region oblique, concave; canthus rostralis distinct; interorbital space a little broader than the upper eyelid; tympanum distinct, half the width of the eye. Outer fingers with a slight rudiment of web, no web between the two inner; a slight rudiment of pollex; toes two-thirds webbed; disks of fingers as large as the tympanum, of toes smaller; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Skin smooth, granular on the belly and under the thighs; heel with a short triangular dermal appendage. Reddish brown above; a dark-brown vertebral line beginning from the tip of the snout; sides of body and of hind limbs with vertical black bars;

lower surfaces whitish, immaculate. From snout to vent 50 millim.

Ecuador; (British Guiana?).

a. ♀.	Ecuador.	Mr. Fraser [C.]. (Type.)

23. Hyla boans.

Hyla multifasciata, *Günth. Cat.* pp. 101 & 146, pl. viii. f. D.
Hyla boans, *Günth. l. c.* p. 102.
Hyla boans, *Daud. Rain.* p. 31, pl. 11, *and Rept.* viii. p. 64; *Dum. & Bibr.* p. 605; *Burmeist. Erläuter.* p. 108.
—— albopunctata, *Spix, Spec. Nov. Test. Ran.* p. 33, pl. 6. f. 5; *Peters, Mon. Berl. Ac.* 1872, p. 207.
—— oxyrhina, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 189; *Cope, Proc. Ac. Philad.* 1863, p. 48.
Hypsiboas raniceps, *Cope, Proc. Ac. Philad.* 1862, p. 353.
—— albipunctatus, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 201.

Tongue subcircular or suboval, entire or slightly nicked, adherent. Vomerine teeth between the large choanæ, in two series forming a /‾\ or a ∩. Habit slender, somewhat like *Rana agilis.* Head as long as broad, or a little longer than broad; snout subacuminate, measuring about once and one third the diameter of the orbit; the distance between the nostril and the eye equals the diameter of the latter; canthus rostralis angular, straight; loreal region not very oblique, slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, about two thirds the width of the eye. A very slight web between the three outer fingers, none between the inner; a slight rudiment of pollex; toes two-thirds webbed; disks of fingers and toes much smaller than the tympanum; subarticular tubercles well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or beyond; the tibia measures the distance from axilla to vent, or somewhat less. Skin smooth, granular on the belly and under the thighs; a narrow, straight, glandular fold from the eye above the tympanum, lost at a small distance beyond the vertical of the shoulder. Greyish or reddish brown above, generally with more or less distinct dark bands across the head, body, and limbs; sometimes a dark vertebral line; sides of head and of limbs dark brown; lower lip white, with a brown margin; beneath whitish, immaculate. Male with an external gular vocal sac. From snout to vent 70 millim.

Guianas; Brazil.

a–b. ♀.	Surinam.	Mr. Bartlett [C.].
c. ♀.	Surinam.	Herr Kappler [C.].
d. Hgr.	Surinam.	
e. ♂.	Pernambuco.	Sir A. Smith [P.].
f. Hgr.	Para.	Mr. Stevens [C.]. (Type of *Hyla multifasciata.*)
g. ♀.	Santarem.	H. A. Wickham, Esq. [C.].
h. ♀.	Brazil.	Prof. Reinhardt [P.]. (As typical of *Hyla oxyrhina.*)

24. Hyla lanciformis.

Hypsiboas lanciformis, *Cope, Proc. Amer. Philos. Soc.* 1870, p. 556.

Tongue oval, indistinctly nicked, adherent. Vomerine teeth between the very large choanæ, in two angular series, forming together a /‾\. Habit very slender. Head longer than broad; snout acuminate, once and a half as long as the diameter of the eye; the distance between the nostril and the eye is greater than the diameter of the latter; canthus rostralis angular, straight; loreal region not very oblique, concave; interorbital space as broad as the upper eyelid; tympanum very distinct, three fourths the diameter of the eye. A very slight web between the three outer fingers, none between the inner; a slight rudiment of pollex; toes three-fourths webbed; disks of fingers and toes much smaller than the tympanum; subarticular tubercles well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches far beyond the tip of the snout; the tibia measures a little more than the distance from axilla to vent. Head and back minutely granulate; belly and lower surface of thighs granulate; a narrow, straight, glandular fold from the eye above the tympanum, lost at a small distance beyond the vertical of the shoulder. Dark brown above, with darker bands across the head, body, and limbs; a blackish vertebral line; sides of head blackish; a white streak round the upper lip; sides of hind limbs blackish; disks of the three inner fingers yellowish above; brown beneath, with a few large whitish spots on the thoracic region. Male with an external gular vocal sac. From snout to vent 77 millim.

Ecuador.

a. ♂. Canelos. Mr. Buckley [C.].

25. Hyla spectrum.

Hyla spectrum, *Reinh. & Lüth. Vidensk. Meddel.* 1861, p. 195.
Hypsiboas spectrum, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.

Tongue slightly emarginate. Vomerine teeth in two oblique series converging towards front, between the choanæ. Head large, as broad as long; snout subacuminate; canthus rostralis distinct; loreal region high, nearly vertical. Fingers webbed at the base; a projecting rudiment of pollex (?). Hind limb very slender. Skin smooth above, granulate on the belly and under the thighs; a slight fold along the forearm and tarsus; heel with a dermal appendage. Brownish above, with faint bands across the back and hind limbs; a dark vertebral line, beginning from the tip of the snout.

Brazil.

26. Hyla leprieurii.

Hyla leprieurii, *Günth. Cat.* p. 101.
Hyla leprieurii, *Dum. & Bibr.* p. 553.
Hypsiboas leprieurii, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.

Tongue subcircular or suboval, entire or slightly nicked, and slightly free behind. Vomerine teeth in two series between the large choanæ, forming together an arch the convexity of which is turned forwards. Head moderate, depressed, as long as broad. Snout rounded or subacuminate, once and a half as long as the diameter of the eye; loreal region not very oblique, slightly concave; canthus rostralis angular, nearly straight; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Three outer fingers one-third webbed; no rudiment of pollex; toes nearly entirely webbed; disks much smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Upper surfaces smooth, or covered with small round tubercles, especially in males; beneath granulate; a fold above the tympanum. Greyish or reddish brown above, with dark-brown spots or cross bands; a dark cross band between the eyes appears to be constant; loreal and temporal regions dark brown; a more or less distinct light spot under the eye; upper surface of limbs with dark cross bands; sides of body and limbs brownish, immaculate; beneath whitish, immaculate. Male with two large vocal vesicles, each being situated behind the angle of the mouth; during the breeding-season the inner side of the first finger is covered with brown rugosities; sometimes also brown rugosities may be seen on the tubercles of the upper surfaces and under the toes, as in *Pelodytes punctatus*. From snout to vent 54 millim.

S. America.

a–b, c–d, e, f, g–l, m–o, p. ♂ ♀.	Demerara Falls.	
q–s. ♂.	Interior of Brazil.	
t–u. v. ♀.	Sarayacu, Ecuador.	Mr. Buckley [C.].
w. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].

27. Hyla buckleyi. (Plate XXV. fig. 1.)

Tongue subcircular, entire, slightly free behind. Vomerine teeth in two series between the large choanæ, forming together an arch the convexity of which is turned forwards. Head moderate, rather depressed, as long as broad, or a little broader than long; snout rounded, once and a half as long as the diameter of the eye; loreal region very oblique, concave; canthus rostralis distinct, curved; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum very distinct, two thirds or three fourths the diameter of the eye. Three outer fingers one-third webbed; no rudiment of pollex; toes nearly entirely webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so far. Upper surfaces smooth in females, tubercular in males; beneath granulate; a slight fold above the tympanum. Greyish or brownish above, marbled with dark brown; sometimes a light vertebral stripe; limbs with dark cross bars; hinder side of thighs marbled with brown; beneath whitish, more or less dotted or reticulated with brown. Male with two vocal vesicles, each being situated behind the angle of the mouth; during the breeding-season the inner side of the first finger is covered with brown rugosities. From snout to vent 55 millim.

Closely allied to *H. leprieurii*, from which it differs chiefly by the more oblique loreal region and curved canthus rostralis.

Ecuador.

a. Several spec., ♂ ♀.	Canelos.	Mr. Buckley [C.].
b, c–e. ♂ ♀.	Sarayacu.	Mr. Buckley [C.].
f. ♀.	Paitanga.	Mr. Buckley [C.].

28. Hyla taurina.

Osteocephalus taurinus, (*Fitz.*) *Steindachn. Arch. per la Zool.* ii. fasc. i. p. 77, pl. 6. f. 1–3.
? Osteocephalus flavolineatus, *Steindachn. l. c.* p. 80, pl. 6. f. 4–7.
Trachycephalus (Osteocephalus) taurinus, *Steindachn. Novara, Amph.* p. 64.
? Trachycephalus (Osteocephalus) flavolineatus, *Steindachn. l. c.*

Tongue suboval, entire, scarcely free behind. Vomerine teeth between the very large choanæ, in two arched series, forming together a /‾\. Head large, depressed, a little broader than long; skull strongly ossified in the adult, rugose, the derm, however, being free, the edges of the fronto-parietals forming two more or less prominent carinæ; snout rounded, about once and two thirds as long as the diameter of the eye; loreal region oblique, deeply concave; canthus rostralis very strong, straight; interorbital space broader than the upper eyelid; tympanum very distinct, nearly as large as the eye. Three outer fingers nearly half webbed; no rudiment of pollex; toes entirely webbed; disks not much smaller than the tympanum; subarticular tubercles very prominent. The hind limb being carried along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so. Upper sufaces smooth or tubercular; lower surfaces granulate; a fold above the tympanum. Reddish, brownish, or blackish above, spotted or marbled with darker; limbs with broad dark cross bars; flanks sometimes white-spotted; beneath whitish, throat and chest spotted with brown. Male with two large external vocal vesicles, each being situated behind the angle of the mouth; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 100 millim.

Guianas; N. Brazil; Colombia.

a–b, c–f. ♂ ♀.	Demerara Falls.	
g. ♀.	Vryheids Lust, Demerara.	Rev. W. T. Turner [C.].
h. ♀.	Surinam.	Herr Kappler [C.].
i–m. ♂, ♀, & hgr.	Santarem.	H. A. Wickham, Esq. [C.].
n. ♀.	Caracas.	

29. **Hyla langsdorffii.**

Hyla langsdorffii, *Dum. & Bibr.* p. 557.
Osteocephalus langsdorffii, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.

Tongue oval, entire, scarcely free behind. Vomerine teeth in two arched series, the convexity of which is turned forwards, between the very large choanæ. Head large, depressed; snout rounded; loreal regions concave; canthus rostralis distinct, rounded, with small pits and prominences; crown concave, the borders of the fronto-parietals forming two prominent ridges, which unite on the occiput; tympanum very distinct, three fourths the diameter of the eye. Three outer fingers nearly entirely webbed, the two last phalanges of third free; toes entirely webbed. Upper surfaces covered with very small conical tubercles; lower surface granulate; a denticulated fringe along the outer edge of the forearm and fourth finger and of the tarsus and fifth toe. Upper surfaces marbled with grey, whitish, light brown, and dark brown; limbs with large black spots, transversely dilated; white beneath; a large black spot beneath the vent, and reticulations of the same on each side. From snout to vent 98 millim.

Brazil.

30. **Hyla planiceps.**

Osteocephalus planiceps, *Cope, Proc. Ac. Philad.* 1874, p. 122.

Tongue oval, adherent. Vomerine teeth in two curved transverse series between the posterior portions of the very large choanæ. Head broad and plane on the upper surface to the straight and rectangular canthus rostralis; loreal region nearly vertical; upper surface of skull rugose with ossific deposit, which nowhere penetrates the free derm; the lateral margins of the fronto-parietals indicated by delicate angular ridges; the diameter of the eye equals the space between it and the nostril; tympanum three fourths the diameter of the eye. Fingers free; no projecting rudiment of pollex; toes three-fourths webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches a little beyond the tip of the snout. Back minutely tubercular, belly and sides coarsely areolate; a short tubercular fold from orbit to behind scapula. Above uniform dark brown; a light border to the upper lip, and a lighter line from the orbit to the angle of the mouth; dermal scapular fold pale-edged; femur and tibia with dark cross bands on the exposed surfaces. From snout to vent 60 millim.

Nauta, Upper Amazon.

31. **Hyla venulosa.**

Hyla lichenosa, part., *Günth. Cat.* p. 102.
Hyla venulosa, *Günth. Cat.* p. 104.
Merian, Ins. Surin. t. 56; *Seba*, i. t. 71, f. 1 & 2, & t. 72. f. 4.
Rana venulosa, *Laur. Syn. Rept.* p. 31.

Hyla tibiatrix, *Laur. l. c.* p. 34; *Daud. Rain.* p. 36.
Rana zebra, var. venulosa, *Shaw, Zool.* iii. p. 124.
—— meriana, *Shaw, l. c.* p. 133.
Calamita boans, *Schneid. Hist. Amph.* p. 164; *Merr. Tent.* p. 173.
Hyla venulosa, *Daud. Rain.* p. 35, pl. 13, *and Rept.* viii. p. 74; *Gravenh. Delic.* p. 24; *Dum. & Bibr.* p. 560; *Guichen. Rept. in Casteln. Anim. nouv. ou rares*, p. 84; *Burmeister, Erläuter.* p. 106; *Steindachn. Novara, Amph.* p. 58, pl. 3. f. 18; *Peters, Mon. Berl. Ac.* 1872, p. 219, & 1873, p. 613.
—— zonata, *Spix, Spec. Nov. Test. Ran.* p. 41, pl. 12. f. 1.
—— bufonia, *Spix, l. c.* p. 42, pl. 12. f. 2.
Hypsiboas venulosa, *Wagl. Syst. Amph.* p. 201; *Tschudi, Batr.* p. 72.
Auletris tibiatrix, *Wagl. l. c.*
Dendrohyas tibiatrix, *Tschudi, Batr.* p. 74.
Hyla vermiculata, *Dum. & Bibr.* p. 563.
Scytopis hebes, *Cope, Proc. Ac. Philad.* 1862, p. 354.
Acrodytes venulosus, *Cope, Nat. Hist. Rev.* 1865, p. 109.
Scytopis venulosus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 85.

Tongue circular, entire or indistinctly nicked, and slightly free behind. Vomerine teeth on a level with the hinder edge of the choanæ, forming generally a straight interrupted series, sometimes a very open chevron, the point of which is directed forwards. Head moderate, broader than long; snout short, rounded, a little longer than the diameter of the orbit; canthus rostralis rounded; loreal region concave; interorbital space as broad as the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Fingers one-third or one-fourth webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks as large as, or nearly as large as, the tympanum; subarticular tubercles very prominent; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tympanum or the eye. Upper sufaces generally warty; a fold above the tympanum; in old specimens, the derm of the region limited by this fold frequently thickened into a parotoid; lower surfaces granulate. Brown above, spotted or marbled with darker; hind limbs with broad dark cross bars; lower surfaces whitish, immaculate. Male with two very large external vocal vesicles, each being situated behind the angle of the mouth; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 93 millim.

S. America.

a. ♀.	Berbice.	
b–c. ♀.	Better Hope, British Guiana.	Rev. W. T. Turner [C.].
d. ♀.	British Guiana.	
e. ♂.	Surinam.	Herr Kappler [C.].
f, g. ♂ ♀.	Cayenne.	
h. ♀.	Para.	R. Graham, Esq. [P.].
i–k. ♂.	Santarem.	H. W. Bates, Esq. [C.].
l. Hgr.	Amazons.	Dr. Günther [P.].
m. ♀.	Pernambuco.	Sir A. Smith [P.].
n,. Skeleton.	S. America.	

32. Hyla nigropunctata.

Hyla lichenosa, part., *Günth. Cat.* p. 102, pl. viii. f. C.

Very closely allied to *H. venulosa*, from which it differs principally by a smaller tympanum. The diameter of the latter equals one third or one half the diameter of the eye, and equals in size the digital disks. Upper surfaces covered with large flat warts; derm of parotoid region thickened, limited by a strong fold above the tympanum. Brown above, generally with small black round spots; generally a broad white band from the upper eyelid to the loin; limbs not, or indistinctly, cross-barred; lower surfaces whitish, immaculate. From snout to vent 62 millim.

Mexico.

a. ♀.	Jalapa.	Mr. Hoege [C.].	
b–e. Hgr. & yg.	Vera Cruz.	M. Sallé [C.].	Types of *Hyla lichenosa*.
f. Hgr.	Cordova.		
g. Hgr.	Mexico.		
h–i. Hgr. & yg.	Mexico.		

33. Hyla mesophæa.

Hyla leucophyllata, *Burmeist. Erläuter.* p. 104, pl. 31. f. 1.
—— mesophæa, *Hensel, Arch. f. Naturg.* 1867, p. 154; *Peters, Mon. Berl. Ac.* 1872, p. 772.

Tongue circular, entire, and slightly free behind. Vomerine teeth in a straight interrupted series on a level with the hinder edge of the choanæ. Head broader than long; snout short, rounded, scarcely longer than the diameter of the orbit; canthus rostralis rounded; loreal region concave; interorbital space as broad as the upper eyelid; tympanum two thirds the diameter of the eye. Fingers one-third webbed; toes nearly entirely webbed; disks of fingers nearly as large as the tympanum, of toes a little smaller; subarticular tubercles very prominent; a slight tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper surfaces with small smooth warts; a strong fold from the upper eyelid to the shoulder; throat, belly, and lower surface of thighs largely granulate. The back covered by a large dark reddish-brown spot, distinctly limited from the light reddish brown of the remaining parts, but blending posteriorly into the light coloration of the hind limbs; the anterior limit of this spot is a straight line drawn across the front of the interorbital space and the upper eyelids; the lateral borders of this spot, to the sacral region, very light, almost white; limbs immaculate; lower surfaces whitish, immaculate. From snout to vent 46 millim.

Brazil.

a. ♀.	Bahia.	Dr. Wucherer [C.].

34. **Hyla quadrangulum.** (Plate XXV. fig. 2.)

Tongue circular, entire, and slightly free behind. Vomerine teeth on a level with the hinder edge of the choanæ, in a nearly straight interrupted series. Head moderate, broader than long; snout short, rounded, slightly longer than the diameter of the orbit; canthus rostralis moderately distinct, slightly curved; loreal region concave; interorbital space a little broader than the upper eyelid; tympanum very distinct, half the diameter of the eye. Three outer fingers half webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks as large as the tympanum; subarticular tubercles rather small, not very prominent; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin of head and back thick, minutely pitted; lower surfaces granulate; a fold above the tympanum. Greyish olive above; a large quadrangular dark-brown spot begins between the eye and ends on the sacrum; other dark-brown spots on the sides and the hind part of the back; a blackish line along the canthus rostralis; limbs regularly cross-barred; beneath dirty white, immaculate. From snout to vent 58 millim.

Ecuador.

a. ♀.	W. Ecuador.	Mr. Fraser [C.].

35. **Hyla coriacea.**

Hyla coriacea, *Peters, Mon. Berl. Ac.* 1867, p. 711.

Tongue subcircular, indistinctly emarginate, and slightly free behind. Vomerine teeth a little behind the level of the choanæ, in a nearly straight interrupted series. Head moderate, broader than long; snout short, rounded, slightly longer than the diameter of the orbit; canthus rostralis moderately distinct, straight; loreal region slightly grooved; interorbital space a little broader than the upper eyelid; tympanum very distinct, not quite two thirds the diameter of the eye. Three outer fingers extensively webbed, the membrane reaching the disks of the second and fourth, the penultimate phalange of the third; no projecting rudiment of pollex; toes webbed to the disks; latter as large as the tympanum; subarticular tubercles small, not very prominent; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin of head and back thick, leathery, minutely pitted; sides largely areolate; lower surfaces granulate; a fold above the tympanum. Chestnut-brown above; a narrow light line forms a hourglass-shaped figure beginning between the eye and ending on the sacrum; behind this a few transverse light lines; axilla black; lower surfaces brownish white, immaculate. Male with two large external vocal vesicles, each being situated behind the angle of the mouth. From snout to vent 62 millim.

Surinam.

a. ♀.	Surinam.	Herr Kappler [C.].

36. Hyla nigromaculata.

Trachycephalus geographicus, *Günth. Cat.* p. 118.
Trachycephalus nigromaculatus, *Tschudi, Batr.* p. 72.
—— geographicus, *Dum. & Bibr.* p. 536; *Steindachn. Novara, Amph.* p. 63.
—— marmoratus, *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 243, pl. 9. f. 3.

Tongue subcircular, entire, scarcely free behind. Vomerine teeth in a straight or slightly curved, scarcely interrupted series on a level with the hinder edge of the choanæ. Head moderate, a little broader than long, rough, the derm involved in the cranial ossification; snout rounded, once and a half or once and two thirds as long as the diameter of the eye; loreal region oblique, concave; canthus rostralis angular; crown slightly concave; interorbital space much broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Three outer fingers one-third webbed; no rudiment of pollex; toes nearly entirely webbed; disks of fingers about as large as the tympanum, of toes rather smaller; subarticular tubercles well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye or a little beyond. Upper surfaces smooth or with small tubercles; lower surfaces granulate; a curved fold above the tympanum. Brown or olive above, marbled with darker; whitish beneath, immaculate. Male with two external vocal vesicles, each being situated behind the angles of the jaws; during the breeding-season the inner side of the first finger is covered with blackish rugosities. From snout to vent 90 millim.

Brazil.

a. ♀.	Brazil.	Lord Stuart [P.].
b–c. ♂ ♀.	S. America.	

37. Hyla septentrionalis.

Trachycephalus marmoratus, *Günth. Cat.* p. 117.
Dendrohyas septentrionalis, *Tschudi, Batr.* p. 74.
Trachycephalus marmoratus, *Bibr. in R. de la Sagra, Hist. Cuba, Rept.* t. 29; *Dum. & Bibr.* p. 538; *Cope, Proc. Ac. Philad.* 1863, p. 44; *Steindachn. Novara, Amph.* p. 63; *Gundlach, Repert. Fis. nat. de Cuba,* ii. p. 118.
? Hyla brunnea, *Gosse, A Naturalist's Sojourn in Jamaica,* p. 361.
Trachycephalas insulsus, *Cope, l. c.* p. 43.
? Trachycephalus wrightii, *Cope, l. c.* p. 45.

Tongue subcircular, generally broader than long, entire or scarcely emarginate, and slightly free behind. Vomerine teeth between the moderate-sized choanæ, in two straight or slightly arched series. Head moderate, broader than long in full-grown specimens, as long as broad in half-grown and young; derm of head involved in the rugose cranial ossification; posterior outline of casque openly emarginate; snout rounded, about once and one third as long as the diameter of the orbit; the distance from the nostril to the eye equals the diameter of the latter; loreal region oblique, concave; canthus rostralis strongly marked, with a slight point or ridge at a small distance from the orbit; crown concave in the adult; interorbital space much broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Fingers slightly webbed; no projecting rudiment of pollex; toes two-thirds webbed; disks of fingers nearly as large as the tympanum, of toes smaller; subarticular tubercles well developed; a slight fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper surfaces smooth or tubercular; lower surfaces granulate; a fold above the tympanum. Greyish or olive above, spotted or marked with darker; hinder side of thighs reticulated with blackish; beneath whitish, immaculate. Male with two external vocal vesicles, each being situated near the angle of the mouth; during the breeding-season the inner side of the first finger covered with blackish rugosities. From snout to vent 75 millim.

W. Indies.

a–d. ♀ & hgr.	Cuba.	Zoological Society [P.].
e, f–k. ♀ & hgr.	Cuba.	
l–q. ♂, hgr., & yg.	S. Domingo.	
r. Skeleton.	——?	

38. **Hyla ovata.**

Trachycephalus dominicensis, part., *Günth. Cat.* p. 118.
Trachycephalus ovatus, *Cope, Proc. Ac. Philad.* 1863, p. 44.

Tongue subcircular, entire or scarcely emarginate, and slightly free behind. Vomerine teeth between the rather large choanæ, in two straight or slightly arched series. Head moderate, as long as broad; derm of head involved in the rugose cranial ossification; posterior outline of casque nearly straight; snout rounded, once and a half or once and one third as long as the diameter of the orbit; the distance between the nostril and the eye equals the diameter of the latter; loreal region oblique, concave; canthus rostralis strongly marked; crown concave in the adult; interorbital space much broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Three outer fingers nearly half webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks of fingers as large as the tympanum, of toes smaller: subarticular tubercles well developed; a slight fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the front of the eye, the tip of the snout, or between these two points. Upper surfaces smooth or sparsely tuberculous; beneath granulate; a fold above the tympanum. Brown above, variegated with darker; beneath whitish, immaculate. From snout to vent 72 millim.

W. Indies.

a. ♀.	S. Domingo.	M. Sallé [C.].
b. ♀.	Jamaica.	
c. Hgr.	Hayti.	Zoological Society [P.].

39. Hyla dominicensis.

Trachycephalus dominicensis, part., *Günth. Cat.* p. 118.
Hypsiboas dominicensis, (*Bibr.*) *Tschudi, Batr.* p. 72.
Trachycephalus dominicensis, *Dum. & Bibr.* p. 536.
—— scutigerus, *Cope, Proc. Ac. Philad.* 1863, p. 45.

Tongue broader than long, openly emarginate, and slightly free behind. Vomerine teeth between the very large choanæ, in two series, forming together an arch the convexity of which is turned forwards. Head large, broader than long; derm of head involved in the rugose cranial ossification; posterior outline of casque openly emarginate; snout rounded, the tip vertically truncated, about once and a half as long as the diameter of the orbit; the distance between the nostril and the eye is considerably greater than the diameter of the latter; canthus rostralis angular, straight; loreal region not very oblique, concave; crown slightly concave; interorbital space nearly three times the width of the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Three outer fingers one-third webbed; no projecting rudiment of pollex; toes three-fourths webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin smooth above, granulate beneath; a fold above the tympanum. Brown above, variegated with darker; loreal and temporal regions blackish brown; hind limbs with regular blackish-brown cross bars; beneath whitish, throat and chest brown-dotted. From snout to vent 75 millim.

W. Indies.

a. ♀.	Jamaica.	N. Wilson, Esq. [P.].
b. ♀.	W. Indies.	

40. Hyla lichenata.

Trachycephalus lichenatus, *Günth. Cat.* p. 118.
Trachycephalus lichenatus, *Gosse, A Naturalist's Sojourn in Jamaica,* p. 362, pl. 7; *Cope, Proc. Ac. Philad.* 1863, p. 46.
—— anochlorus, *Gosse, l. c.*; *Cope, l. c.*

Tongue subcircular, a little broader than long, entire, slightly free behind. Vomerine teeth between the very large choanæ, in two straight or slightly arched oblique series, convergent towards front. Head rather large, broader than long, rough, bony, the derm involved in the cranial ossification; snout rounded, the tip vertically truncate; loreal region oblique, concave; canthus rostralis curved, forming a sharp elevated ridge; crown concave; interorbital space very broad, measuring the distance from the eye to the tip of the snout; hinder edge of casque raised, doubly convex; a supratympanic ridge; tympanum very distinct, two thirds or three fourths the diameter of the eye. Three outer fingers one-third webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks of fingers as large as, or rather larger than, the tympanum, of toes smaller; subarticular tubercles well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin of upper surfaces more or less roughly tubercular; some prominent elevations near vent, two on the heel, and several on the tarsus and forearm. Brown above, variegated with darker; whitish beneath, throat brown-spotted. Male with an internal subgular vocal sac. From snout to vent 117 millim.

Jamaica.

a. ♀.	Jamaica.	Mrs. Mauger [P.].
b. ♀.	Jamaica.	
c. ♂.	W. Indies.	T. C. Eyton, Esq. [P.].
d–e. ♀.	W. Indies.	
f. ♀, skeleton.		

41. Hyla baudinii.

Hyla baudinii, *Günth. Cat.* p. 105.

Hyla baudinii, *Dum. & Bibr.* p. 564; *Brocchi, Bull. Soc. Philom.* (7) i. p. 124.

—— vanvloeti, *Baird, Proc. Ac. Philad.* 1854, p. 61.

—— muricolor, *Cope, Proc. Ac. Philad.* 1862, p. 359.

Smilisca daulinia, *Cope, Proc. Ac. Philad.* 1865, p. 194.

—— baudinii, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 85.

Hyla pansosana, *Brocchi, l. c.* p. 125.

Tongue circular, entire or slightly nicked, and free behind. Vomerine teeth in a straight interrupted series in the middle between the choanæ. Head broader than long; snout rounded, a little longer than the diameter of the orbit; canthus rostralis angular; loreal region concave; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum very distinct, two thirds or three fourths the diameter of the eye. Fingers one-third, toes three-fourths webbed; disks considerably smaller than the tympanum; subarticular tubercles very prominent; a distinct fold along the inner side of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granulate beneath; a fold above the tympanum. Olive or greyish above, spotted or marbled with dark brown or dark green; hind limb with dark cross bars; nearly always a black spot behind the tympanum; lower surfaces whitish, immaculate. Male with two external vocal vesicles, one on each side of the throat. From snout to vent 68 millim.

Central America; Texas.

a–c, d. ♂ ♀.	Mexico.	Hugo Finck, Esq.
e, f. ♂ ♀.	Mexico.	M. Sallé [C.].

g–h, i, k. ♂ ♀.	Mexico.	
l, m. ♀ & hgr.	Vera Cruz.	
n. ♀.	Vera Paz.	O. Salvin, Esq. [C.].
o, p, q. ♂ ♀.	Coban.	O. Salvin, Esq. [C.].
r–s. ♂.	Honduras.	

42. **Hyla gabbii.**

Hyla gabbii, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 103.

Allied to *H. baudinii*; differing in the following points:—Tympanum less than half the area of the orbit. Fingers half webbed, the disks about equal to the tympanum. Colour ashy brown, the pigment forming a narrow band on the upper face of the femur; anterior and posterior faces of femur dusky, uniform; some large irregular brown spots on the back; groin marbled with light brown and white; lip with a faint pale border, no large spots on it or the lores; tibia and forearm with broad pale-brown cross bands; lower surfaces all whitish. From snout to vent 56 millim.

Costa Rica.

43. **Hyla salvini.**

Tongue subcircular, entire, and slightly free behind. Vomerine teeth in two short transverse series between the choanæ. Head moderate, as long as broad; snout rounded, longer than the diameter of the orbit; canthus rostralis distinct; loreal region oblique, slightly concave; interorbital space slightly broader than the upper eyelid; tympanum distinct, half the diameter of the eye. Three outer fingers three-fourths webbed; no projecting rudiment of pollex; toes entirely webbed; disks nearly as large as the tympanum; subarticular tubercles not much developed; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Skin smooth above, or with scattered very small tubercles; a slight denticulation along the outer side of the forearm; beneath granulate. Uniform brown above; hind limbs with indistinct darker cross bands; sides of body and of thighs with brown reticulation; beneath whitish, immaculate. From snout to vent 55 millim.

Costa Rica.

a. ♀.	Cartago.	
b. ♀.	Costa Rica.	O. Salvin, Esq. [C.].

44. **Hyla versicolor.**

Hyla versicolor, *Günth. Cat.* p. 103.
? Hyla verrucosa, *Daud. Rain.* p. 33, pl. 4. f. 1.
Hyla versicolor, *Leconte, Ann. Lyc. N. H. New York*, i. p. 281; *Harlan, Journ. Ac. Philad.* v. p. 343; *Holbr. N.-Amer. Herp.* i. p. 101, pl. 17; *Dum. & Bibr.* p. 566; *Dekay, New York Faun.*,

Rept. p. 71, pl. 21. f. 53 *a*; *Leconte, Proc. Ac. Philad.* 1855, p. 428; *Wied, Nov. Act.* xxxii. p. 116.
Dendrohyas versicolor, *Tschudi, Batr.* p. 75.

Tongue circular, slightly nicked, and free behind. Vomerine teeth in two straight or slightly oblique groups on a level with the hinder edge of the choanæ. Head broader than long; snout rounded, as long as, or slightly longer than, the diameter of the orbit; canthus rostralis distinct; loreal region slightly concave; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Fingers one-third, toes three-fourths webbed; disks smaller than the tympanum; subarticular tubercles moderate; a very distinct fold along the inner side of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tympanum or the posterior corner of the eye. Upper surfaces with small smooth warts, lower surfaces granulate; a strong fold across the chest. Greyish or olive above, with irregular darker markings and dark cross bars on the limbs; sides of thighs yellow, with a black network; beneath immaculate. Male with a large, dark-coloured, external subgular vocal sac. From snout to vent 53 millim.

Eastern North America.

a. ♂.	Canada.	J. Howell, Esq. [P.].
b. ♂.	Chippaway.	
c. ♂.	New York.	
d. ♀.	Philadelphia.	
e. ♀.	N. America.	Dr. J. Green [P.].
f. ♂.	(Mexico?)	

45. **Hyla arenicolor.**

Hyla affinis, (*non Spix*) *Baird, Proc. Ac. Philad.* vii. 1854, *and U.S. Mex. Bound. Surv., Rept.* p. 29, pl. 38. f. 4–7.
—— arenicolor, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 84.

Tympanum two thirds the size of the eye. Fingers one-third webbed. Tibia reaching more than halfway from vent to centre of eye. Body rough. Colour ash-grey or green, with numerous rounded dorsal blotches; three transverse bands on each thigh and leg; no vermiculation on anterior and posterior faces of hind legs nor on lower part of sides; a light spot under the eye. From snout to vent 45 millim.

Northern Sonora.

46. **Hyla cadaverina.**

Hyla nebulosa, (*non Spix*) *Hallow. U.S. R. R. Surv.* x., *Williamson's Rep., Rept.* p. 21, pl. 10. f. 2.
—— cadaverina, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 84.

Tongue subcircular, openly emarginate, and free behind. Vomerine teeth in two oblique groups between the choanæ. General form of *H. versicolor*, but the extremities more slender. Back covered with minute pustulations. Uniform light grey above; a considerable number of dark-coloured subcircular spots, about a line in diameter, scattered over the upper part of the body and upon the sides, in some specimens mingled with irregular blotches upon the back; lower surfaces immaculate. From snout to vent 40 millim.

Tejon Pass, California.

17. Hyla regilla.

Hyla regilla, *Baird & Gir. Proc. Ac. Philad.* 1852, p. 174, & 1853, p. 301; *Girard, U.S. Explor. Exp., Herp.* p. 60, pl. 3. f. 13–18; *Brocchi, Bull. Soc. Philom.* (7) i. p. 127.

—— scapularis, *Hallow. Proc. Ac. Philad.* 1852, p. 183, & 1854, p. 97, *and U.S. R. R. Surv.* x., *Williamson's Rep., Rept.* p. 21.

Tongue subcircular, slightly nicked, and free behind. Vomerine teeth in two groups on a level with the hinder edge of the choanæ. Head moderate, broader than long; snout rounded, about as long as the diameter of the orbit; canthus rostralis distinct; loreal region not concave; interorbital space as broad as the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers with a slight rudiment of web; toes half webbed; disks a little smaller than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Upper surfaces with small smooth warts; lower surfaces granulate; a strong fold across the chest. Olive or greenish above; a dark streak on each side of the head, through the eye, becoming much broader behind the latter; generally a few dark spots on the upper surface of body and dark bands across the limbs; beneath immaculate. Male with an external subgular vocal sac. From snout to vent 37 millim.

Western North America: (Vera Paz?).

a–b. ♂ ♀.	Vancouver's Island.	J. K. Lord, Esq. [P.].
c–k. ♀, hgr., & yg.	Vancouver's Island.	Col. Hawkins [P.].
l–n. ♀, hgr., & yg.	San Juan, New Oreades.	H.M.S. 'Plumper.'
o. ♂.	Sumass Prairies.	Boundary Comm.
p. ♀.	Nassa Creek, California.	
q–r. Hgr.	California.	

18. Hyla fusca*.

Hyla fusca, *Daud. Rain.* p. 43, *and Rept.* viii. p. 5; *Dum. & Bibr.* p. 573.

Calamita fuscus, *Merr. Tent.* p. 170.

Tongue circular, nicked, and free behind. Vomerine teeth in two small groups between the choanæ. Snout short, rather truncate; canthus rostralis distinct; loreal region nearly vertical; tympanum half the diameter of the eye. Fingers rather slender, webbed at the base; toes two-thirds webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the tip of the snout. Skin smooth above, granulate beneath; a fold above the tympanum, and another across the chest. Uniform chestnut-brown above, whitish beneath. From snout to vent 42 millim.

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* The specimen mentioned under this name in the 'Catalogue of Batrachia Salientia' is evidently of a quite different species. This I have not been able to identify with any of these described. The specimen is in a bad state of preservation.

America?

49. Hyla zebra.

Hyla zebra, *Dum. & Bibr.* p. 575.

Vomerine teeth on a level with the hinder edge of the choanæ. Fingers one-third, toes four-fifths webbed. Head covered with small granules. Flanks with large black spots; thighs with broad black bands alternating with narrower white ones. Otherwise as in *H. fusca*. From snout to vent 64 millim.

Buenos Ayres.

50. Hyla pulchella.

Hyla agrestis, *Günth. Cat.* p. 105.
Hyla prasina, *Günth. l. c.*
Hyla pulchella, *Dum. & Bibr.* p. 588; *Steindachn. Abh. zool.-bot. Ges. Wien*, 1864, p. 241, pl. 9. f. 2.
? Hyla leucomelas, *Dum. & Bibr.* p. 576.
Hyla agrestis, *Bell, Zool. Beagle, Rept.* p. 46, pl. 19. f. 3; *Cunningh. Trans. Linn. Soc.* xxvii. p. 466.
—— prasina, *Burmeist. Erläuter.* p. 106, pl. 31. f. 2; *Giebel, Zeitschr. Ges. Naturwiss.* xxix. p. 28.
—— lateralis, *Raddi, Mem. Soc. Ital.* xix. p. 67.
—— rubicundula, *Hensel, Arch. f. Naturg.* 1867, p. 158.

Tongue subcircular, entire, and free behind. Vomerine teeth in two small groups on a level with the hinder edge of the choanæ. Head rather small, about as long as broad; snout rounded, longer than the diameter of the eye; canthus rostralis distinct; loreal region nearly vertical; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum very distinct, about half the diameter of the eye. Fingers slightly webbed; no projecting rudiment of pollex; toes two-thirds or three-fourths webbed; disks smaller than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so. Skin smooth or minutely granulate above, strongly granulate beneath; a fold from the eye to the shoulder above the tympanum. The specimens at my disposal show two varieties of coloration, which are perhaps simply sexual characters, as all the specimens of the first variety are females and those of the second are males. In the former, the upper surfaces are greenish, immaculate; a white, beneath black-margined streak extends from the eye to the groin, and another along the outer side of the tibia. In the latter variety, the upper surfaces are brownish, spotted or marbled with darker; the white streaks on the sides of the body and legs are not distinguishable, and the sides of the head and body are darker, especially on the loreal and temporal regions. In both varieties the upper lip is white-margined, at least from the vertical of the eye, and the groin and the sides of the thighs are spotted with deep black. Male with an external subgular vocal sac, covered by an ⋏-shaped fold of the skin. From snout to vent 50 millim.

Brazil; Uruguay; Buenos Ayres.

a–b. ♀ & yg.	Maldonado.	C. Darwin, Esq. [P.]. (Types of *Hyla agrestis.*)
c–e. ♀.	Monte Video.	Dr. Cunningham [P.].
f. ♀, skeleton.	Monte Video.	
g–i. ♂ ♀.	Soriano, Uruguay.	— Havers, Esq. [P.].
k. ♂.	Buenos Ayres.	Ernest Gibson, Esq. [P.].
l–m. Hgr.	Buenos Ayres.	E. W. White, Esq. [C.].

51. **Hyla vauteri.**

Hyla vauterii, *Günth. Cat.* p. 106.
Hyla vauterii, (*Bibr.*) *Bell, Zool. Beagle, Rept.* p. 45, pl. 19. f. 2; *Hensel, Arch. f. Naturg.* 1867, p. 157.

Agrees in every respect with *H. pulchella* but in the position of the vomerine groups; these are rather oblique, forming together a very open chevron the point of which is turned forwards. Reddish brown above, spotted with darker; a dark streak along the canthus rostralis, and a dark band on the temporal region; groin and thighs spotted as in *H. pulchella*. From snout to vent 39 millim.

Uruguay; S. Brazil.

a. ♀.	Maldonado.	C. Darwin, Esq. [P.]. (Type.)

52. **Hyla nasica.**

Hyla nasica, *Cope, Proc. Ac. Philad.* 1862, p. 354.
? Hyla granulata, *Peters, Mon. Berl. Ac.* 1871, p. 651.

Tongue elliptic, scarcely emarginate. Vomerine teeth in two transverse contiguous short rows between the choanæ. Head small, as long as broad; snout depressed, prominent, faint. Fingers free or nearly so. Skin above slightly tuberculous. Above dark rufous-brown, with some darker longitudinal markings on the back; a dark band from snout through tympanum to side; femur and posterior lateral region varied with dark brown; beneath pale, uniform. From snout to vent 1 inch 5 lines.

Resembles *H. vauteri*, but the head is smaller, narrower, and more acuminate; the tongue is more elongate, and the vomerine teeth are more anterior.

Paraguay; (S. Brazil).

53. **Hyla carolinensis.**

Hyla carolinensis, *Günth. Cat.* p. 105.
Catesby, Nat. Hist. Carol. ii. pl. 71.
Hyla viridis, var. β, *Laur. Syn. Rept.* p. 33.
Calamita carolinensis, *Penn. Zool. Arct.* ii. p. 331.
—— cinereus, *Schneid. Hist. Amph.* p. 174.
Rana bilineata, *Shaw, Zool.* iii. p. 136.
Hyla lateralis, *Daud. Rain.* p. 16, pl. 2. f. 1; *Leconte, Ann. Lyc. New York,* i. p. 278; *Harl. Journ. Ac. Philad.* v. p. 341; *Dum. & Bibr.* p. 587; *Leconte, Proc. Ac. Philad.* 1855, p. 428.
—— viridis, *Holb. N.-Amer. Herp.* iv. pl. 29.
—— semifasciata, *Hallow. Proc. Ac. Philad.* 1856, p. 307.

Tongue subcircular, entire or slightly nicked, and free behind. Vomerine teeth in two small groups on a level with the hinder edge of the choanæ. Head rather small, about as long as broad; snout rounded, about once and a half as long as the diameter of the eye; canthus rostralis distinct; loreal region not very oblique; interorbital space a little broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Fingers one-third webbed: no projecting rudiment of pollex; toes three-fourths webbed; disks smaller than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or slightly beyond. Skin smooth or minutely granulate above, granulate beneath. Greenish above, immaculate; a white streak on the upper lip, extending along the sides of the body; another along the inner side of the tibia. Male with an external subgular vocal sac. From snout to vent 50 millim.

S.E. North America.

a–b. ♀.	New Orleans.
c–e. ♂ & hgr.	N. America.

54. **Hyla uranochroa.**

Hyla uranochroa, *Cope, Journ. Ac. Philad.* (n. s.) viii. p. 103, pl. 27. f. 4.

Tongue circular, slightly nicked, and scarcely free behind. Vomerine teeth in two small groups between the choanæ. Head moderate, as long as broad; snout rounded, about once and a half as long as the diameter of the eye; canthus rostralis distinct; loreal region slightly oblique; interorbital space broader than the upper eyelid; tympanum distinct, somewhat more than half the diameter of the eye. Fingers one-third webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin smooth above, granulate beneath. Purplish blue above, immaculate, the colour sharply defined along the sides: upper lip white-margined; beneath whitish, immaculate. From snout to vent 32 millim.

Costa Rica.

a. ♀. Costa Rica.

55. Hyla pulchrilineata.

Hyla pulchrilineata, *Cope, Proc. Amer. Philos. Soc.* xi. 1869, p. 163.

Form that of *H. arborea*. Tongue slightly free behind. Vomerine teeth in a single transverse series opposite the posterior margin of the choanæ; the latter much larger than the ostia pharyngea. Canthus rostralis distinct; loreal region concave; eye large, tympanum one fourth its size. Fingers free; toes webbed to the base of the penultimate phalange; disks well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the orbit. Skin smooth above; granules of the abdomen unusually weakly developed. Pale ashy brown above, with five longitudinal citron-yellow bands, the outer broadest; femora finely yellow above and behind; a yellow longitudinal line on both the inner and outer sides of the tibia. From snout to vent 38 millim.

San Domingo.

56. Hyla andersonii.

Hyla andersonii, *Baird, Proc. Ac. Philad.* vii. 1854, p. 61; *Cope, eod. loc.* 1862, p. 154.

In proportions and general appearance similar to *H. arborea*. Tongue broad, slightly emarginate. Vomerine teeth in two oblique series between the choanæ, each directed inward and backward. Tympanum about one third the size of the eye. Skin of upper surfaces smooth, minutely corrugated; lower surfaces granulate; a fold across the chest. Above dull olive-brown; the concealed surfaces of limbs, especially those in contact with each other, thickly sprinkled with circular yellowish-white spots on a pale brown ground, seen also on the armpits and sides of body behind; a postocular dark vitta extended down the sides, and sending a dark branch across the arm to the chin; no bars on the limbs. From snout to vent about 2 inches.

United States—New Jersey to South Carolina.

57. Hyla eximia.

Hyla euphorbiacea, *Günth. Cat.* p. 109, pl. x. f. C.

Hyla eximia, *Baird, Proc. Ac. Philad.* 1851, p. 61, *and U.S. Mex. Bound. Surv.* p. 29, pl. 38. f. 8–10; *Peters, Mon. Berl. Ac.* 1869, p. 880; *Brocchi, Bull. Soc. Philom.* (7) i. p. 128.

—— euphorbiacea, *Steindachn. Novara, Amph.* p. 59.

Closely allied to *H. arborea*. The head is smaller, the fingers are more slender, and the web between them very indistinct; the toes are only one-third or half webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tympanum or the posterior border of the eye. Olive above; a brown, light-edged streak from the nostril through the eye and the tympanum, along the side of the body; upper lip with a brown and light margin; beneath whitish, immaculate. Male with an external subgular vocal sac. From snout to vent 40 millim.

Mexico.

A. Back with elongate spots more or less confluent into longitudinal bands. (*H. eximia.*)

a. ♀.	City of Mexico.	Mr. Doorman [C.].

B. Back uniform; hinder side of thighs brownish, white-spotted. (*H. euphorbiacea.*)

b–c. ♀.	Mexico.	M. Sallé [C.].	Types of *H. euphorbiacea.*
d. Skeleton.	Mexico.	M. Sallé [C.].	
e. ♂.	Cordova.	M. Sallé [C.].	
f–g. ♂.	Cordilleras.		

58. Hyla arborea.

Hyla arborea, *Günth. Cat.* p. 107.

Rana arborea, *Linn. S. N.* i. p. 357; *Rösel, Hist. Ran.* p. 32, pls. 9–12; *Sturm, Deutschl. Faun.* iii. Heft 1.

Hyla viridis, *Laur. Syn. Rept.* p. 33; *Daud. Rain.* p. 14, pl. 1, *and Rept.* viii. p. 23; *Gravenh. Delic.* p. 23; *Bonap. Faun. Ital.*; *Dum. & Bibr.* p. 581; *Fatio, Vert. Suisse*, iii. p. 423; *Lessona, Atti Ac. Linc.* i., *Mem. Cl. Sc.-fis. &c.* 1877, p. 1090, pl. 3.

Calamita arboreus, *Schneid. Amph.* p. 153; *Merr. Tent.* p. 170.

Hyla arborea, *Cuv. R. A.*; *De Betta, Faun. Ital., Rett. Anf.* p. 61; *Schreib. Herp. Eur.* p. 106; *Leydig, An. Batr.* p. 94.

Hyas arborea, *Wagl. Syst. Amph.* p. 201.

Dendrohyas arborea, *Tschudi, Batr.* p. 74.

Tongue subcircular, slightly nicked, and free behind. Vomerine teeth in two small transverse or slightly oblique groups between the choanæ. Head moderate, broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis distinct; loreal region slightly oblique, slightly concave: interorbital space as broad as, or a little broader than, the upper eyelid; tympanum distinct, about half the diameter of the eye. Fingers slightly webbed at the base; no projecting rudiment of pollex; toes two-thirds webbed; disks a little smaller than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or a little beyond. Skin smooth above, granulate beneath. Greenish above, uniform whitish beneath. Male with a large, brown, external gular vocal sac. From snout to vent 51 millim.

Europe; temperate Asia; North Africa.

Typical form.

Upper surfaces normally uniform; a greyish or black, light-edged streak from the nostril through the eye and the tympanum along the side of the body, sending upwards and forwards a branch on the loin; a whitish line on the upper lip, descending to the shoulder, and then ascending to the eye, limiting an elongate green zone; a whitish, dark-edged cross line above the vent; the outer side of the forearm, carpus and fourth finger, tibia, tarsus, metatarsus, and fifth toe more or less distinctly edged with a blackish and whitish line.

a–b. ♂.	Hamburg.	Dr. Fricke [P.].
c. ♂.	Harz Mountains.	
d. ♀.	Transylvania.	Messrs. C. G. Danford & J. A. H. Brown [P.].
e. ♀.	Corfu.	R. Freet, Esq. [P.].
f. ♂.	Victoria Alaba, Spain.	Lord Lilford [P.].
g. ♀.	Oporto.	
h. Hgr.	Guezama.	Sir W. C. Trevelyan [P.].
i–l. ♀.	Africa.	
m. ♀.	Giaour Dagh (Asia Minor).	C. G. Danford, Esq. [P.].

VAR. A. (savignyi).

Hyla savignyi, *Aud. Descr. Egypte,* i. *Supplem.* p. 183, pl. 2. f. 13.
Rana arborea, *Seetzen, Reise Syr. Paläst.* iii. p. 486.
Hyla arborea, var. meridionalis, part., *Boettger, Jahresb. Senck. Naturf. Ges.* 1879–80, p. 212.

Similar to the typical form, but the marking on the loin is absent; the lateral streak frequently broken up into spots from the middle of the side.

n. ♂.	Elba.	Sir W. C. Trevelyan [P.].
o. ♀.	Asia Minor.	Haslar Collection.
p. ♂.	Jerusalem.	Rev. H. B. Tristram [C.].
q–s. ♂ ♀.	Wady el Kurm.	Rev. H. B. Tristram [C.].
t–u. ♂ ♀.	Dead Sea.	Rev. H. B. Tristram [C.].
v. ♀.	Lake of Galilee.	H. W. Beddome, Esq. [C.].
w. Many spec., ♂ ♀.	Euphrates Expedition.	
x–y. Hgr.	Near Resht, Ghilan, N. Persia.	W. T. Blanford, Esq. [C.].
z. Hgr.	Hainan.	R. Swinhoe [C.].

VAR. B. (meridionalis).

Hyla arborea, var. meridionalis, *Boettg. Abh. Senck. Ges.* 1874, p. 66.
—— viridis, *Lataste, Herp. Gir.* p. 214.
—— perezi, *Bosca, Ann. Soc. Esp.* ix. 1880, p. 181, *and eod. loc.* x. pl. 2. f. 7–10.

The upper surfaces normally uniform greenish; the green colour extends on each side of the throat, where it vanishes gradually; a blackish, light-edged line from the nostril to the eye, continued behind the latter, covering entirely or partially the tympanum, not extending beyond the shoulder; a whitish cross streak above the vent; a whitish line along the inner edge of the tibia and the outer edge of the tarsus, metatarsus, and fifth toe.

α. ♂.	Bononia.	J. J. Bianconi [P.].
β–δ. ♂ ♀.	Canary Islands.	R. B. Webb, Esq. [P.].
ε, ζ–η. ♀ & hgr.	Madeira.	R. B. Webb, Esq. [P.].
θ–ι. ♂.	Teneriffe.	R. MacAndrew, Esq. [P.].
κ–μ. ♂.	Tunis.	P. L. Sclater, Esq. [P.].

Var. C. (intermedia).

Agrees with the typical form in having a lateral line and a mark on the loin; but the green extends on the sides of the throat, as in var. *meridionalis*.

ν. ♀.	Bononia.	J. J. Bianconi [P.].
ξ. ♀.	Palermo, Sicily.	Dr. O. Boettger [P.].

Var. D. (japonica).

Hyla arborea, var. japonica, *Schleg. Faun. Japon.* p. 112, pl. 3. f. 6.
—— japonica, *Camerano, Atti Acc. Torin.* xiv. 1879, p. 895.

A narrow dark streak from nostril to eye; a broad streak from the eye, covering the tympanum; sides with a dark, light-edged streak not extending to the groin, or with irregular dark spots; back generally with large, irregular, constant dark spots; limbs with dark cross bands; upper lip light-margined.

ο–ρ. ♀ & hgr.	Japan.	Leyden Museum.

59. Hyla chinensis.

Hyla arborea, var. chinensis, *Günth. Cat.* p. 108, pl. ix. f. C.
Hyla chinensis, *Günth. Rept. Brit. Ind.* p. 436; *Camerano, Atti Acc. Torin.* xiv. 1879, p. 894.
—— arborea, var. chinensis, *Steindachn. Novara, Amph.* p. 59.

Abundantly different from *H. arborea*. The vomerine teeth are more posterior, being situated on a level with, and extending somewhat beyond, the hinder edge of the choanæ. The head is rather smaller, and the loreal region more vertical. The hind limb is shorter, the tibio-tarsal articulation reaching only the tympanum or the posterior border of the eye. Blue-green above, immaculate; a brown streak from the tip of the snout through the eye and the tympanum to the shoulder; sides of body and thighs with deep black spots on a white ground; on the thighs the green is reduced to a narrow band; tarsi, feet, and hands not coloured; beneath whitish, immaculate. Male with a large external subgular vocal sac; during the breeding-season the inner side of the first digit bears brown rugosities. From snout to vent 39 millim.

Southern China.

a–b, c–g. ♂, ♀, & hgr.	China.		Types.
h. Skeleton.	China.		
i–k. Hgr.	Formosa.	R. Swinhoe, Esq. [C.].	
l. ♀ (bad state).	Chusan?	E. I. Coll.	

60. Hyla annectens.

Polypedates annectens, *Jerdon, Proc. As. Soc.* 1870, p. 84.
Hyla annectens, *Günth. Proc. Zool. Soc.* 1875, p. 576.

Differs from *H. arborea* and *H. chinensis* in having stouter hands and feet, and a strong tuberculated fold from the eye to the shoulder, over the tympanum. The vomerine teeth are on a level with the hinder edge of the choanæ. The shape of the head as in *H. arborea.* The tibio-tarsal articulation marks the tympanum or the eye. Blue-green above; a dark, above light-edged lateral streak, ending in two or three deep black, separate or confluent spots on the groin; sides of the thighs with deep black spots on white ground; the green forms a band along the thighs; two outer fingers and two outer toes green; beneath whitish, immaculate. Male with an external subgular vocal sac. From snout to vent 49 millim.

N. India.

a. Many spec.: ♂, ♀, & hgr.	Khassya.	T. C. Jerdon, Esq. [P.]. (As typical of *Polypedates annectens.*)

61. Hyla phyllochroa.

Hyla phyllochroa, *Günth. Proc. Zool. Soc.* 1863, p. 251, pl. 30. f. C.; *Steindachn. Novara, Amph.* p. 61.

Tongue subcircular, slightly nicked, and free behind. Vomerine teeth in two very small groups behind the level of the choanæ. Head moderate, broader than long; snout subtriangular, as long as the diameter of the orbit; canthus rostralis angular; loreal region nearly vertical; interorbital space broader than the upper eyelid; tympanum distinct, one third the diameter of the eye. Fingers webbed at the base; no distinct rudiment of pollex; toes three-fourths webbed; disks of fingers a little larger than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granulate beneath; a fold above the tympanum; a strong fold across the chest. Blue-green above, flanks and sides of thighs purplish brown; a narrow black, above white-edged line from the eye, above the tympanum, lost at a short distance from the shoulder. From snout to vent 36 millim.

Eastern Australia.

a. ♀.	Sydney.	G. Krefft, Esq. [C.].	Types.
b. ♀.	Sydney.		
c. ♀.	Errumanga.		

62. Hyla gracilenta.

Hyla gracilenta, *Peters, Mon. Berl. Ac.* 1869, p. 789.
? Pelodryas granulata, *Peters, eod. loc.* 1873, p. 417, pl. 1. f. 4.
Hyla fordii, *Günth. Mus. Godeffr.* xii. p. 47.

Tongue subcircular, slightly nicked, and free behind. Vomerine teeth in two very small groups in the middle between the choanæ. Head moderate, broader than long; snout subtriangular, as long as the diameter of the orbit; canthus rostralis angular; loreal region slightly oblique; interorbital space broader than the upper eyelid; tympanum rather indistinct, about two thirds the diameter of the eye. Three outer fingers extensively webbed, the membrane reaching the disks of the second and fourth; no distinct rudiment of pollex; toes nearly entirely webbed; disks about half the diameter of the eye; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Exposed upper surfaces, belly, and lower surface of thighs granulate; a strong fold across the chest. Exposed upper surfaces blue-green; upper surface of thighs purple; a white line on canthus rostralis, outer border of upper eyelid, and above the tympanum; another along the outer edge of forearm, tibia, and tarsus; beneath white, immaculate. Male with a large external subgular vocal sac. From snout to vent 40 millim.

E. Australia.

a–c. ♂ & hgr.	Rockhampton.	(Types of *H. fordii.*)

63. Hyla jervisiensis.

Hyla jervisiensis, *Dum. & Bibr.* p. 580.
Litoria jervisiensis, *Peters, Mon. Berl. Ac.* 1873, p. 612.

Allied to *H. cærulea.* Vomerine teeth in two groups on a level with the front edge of the choanæ. Fingers webbed at the base. A small glandular fold from the angle of the mouth. Whitish grey above; a brown streak on canthus rostralis and another on temporal region; beneath white. From snout to vent 47 millim.

Jervis Bay, Australia.

64. Hyla cærulea.

Pelodryas cæruleus, part., *Günth. Cat.* p. 119, pl. ix. f. B.
Rana cærulea, *White, Journ. N. S. Wales, App.* p. 248; *Shaw, Zool.* iii. p. 113; *Daud. Rain.* p. 70; *Merr. Tent.* p. 174.
—— austrasiæ, *Schneid. Hist. Amph.* p. 150.
Hyla cyanea, *Daud. Rept.* viii. p. 43.
Calamita cyanea, *Fitzing. Class. Rept.* p. 64; *Tschudi, Batr.* p. 73; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 204.
Calamites cæruleus, *Wagl. Syst. Amph.* p. 200.
Hyla cyanea, part., *Dum. & Bibr.* p. 577.
Pelodryas cæruleus, *Günth. Proc. Zool. Soc.* 1863, p. 250; *Keferst. Arch. f. Naturg.* 1868, p. 288, pl. 8. f. 32.
Calamites cyaneus, part., *Steindachn. Novara, Amph.* p. 66.

Tongue circular, free and very slightly notched behind. Vomerine teeth in two slightly oblique series on a level with the hinder edge of the choanæ. Head broader than long; snout rounded, truncate; canthus rostralis distinct; loreal region slightly concave; the diameter of the eye equals its distance from the nostril; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers one-third webbed; no projecting rudiment of pollex; toes nearly entirely webbed; subarticular tubercles well developed; disks large, those of fingers as large as or somewhat larger than the tympanum, of toes a little smaller; a slight cutaneous fold along the inner side of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the eye. Skin smooth, above much thickened and studded with large pores on the hind part of the head and on the scapular region, this glandular region delimited outwards by a strong curved fold beginning from the posterior angle of the eye; belly and lower surface of thighs granulate. Blue-green above, whitish beneath. Male with an internal subgular vocal sac; during the breeding-season brown rugosities on the inner side of the first finger. From snout to vent 83 millim.

Australia.

The coloration varies:—

A. Spots none; light line along the tarsus none or very indistinct.

a. ♀.	N. Australia.	Dr. J. E. Elsey [P.].
b. ♀.	Port Essington.	Earl of Derby [P.].
c–e. ♂.	Port Essington.	Mr. Gould.
f. ♀.	Murray Island.	Mr. Macfarlane [C.].
g. ♀.	Thursday Isl., Torres St.	Dr. Coppinger [C.].

B. Sides of body with white or pinkish, dark-edged spots; a similar spot on humerus; sometimes small spots of the same colour on the back; a streak of same on the upper lip, from the vertical of the centre of the eye, generally interrupted under the tympanum, extending to the shoulder; another streak along the outer side of forearm and outer finger, the inner side of tibia, and the outer side of tarsus and fifth toe; throat sometimes blue, with pinkish spots.

h. ♂.	Nicol Bay, N.W. coast of Australia.	Mr. Du Boulay [C.].
i–l. ♂ & hgr.	Port Essington.	Earl of Derby [P.].
m. ♀.	Moreton Bay.	
n. Yg.	Sydney.	Dr. Günther [P.].
o. ♀.	Australia.	Voyage of the 'Herald.'

65. Hyla dolichopsis.

Pelodryas cæruleus, part., *Günth. Cat.* p. 119, pl. ix. f. *b.*
Hyla cyanea, *Schleg. Abbild.* pl. 9. f. 2.

Hyla cyanea, part., *Dum. & Bibr.* p. 577.
Calamites cyaneus, part., *Steindachn. Novara, Amph.* p. 66.
Calamita dolichopsis, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 204.
Pelodryas militarius, *Ramsay, Proc. Linn. Soc. N. S. Wales*, ii. p. 28; *Macleay, ibid.* p. 138.

Differs from *H. cærulea* in the following points:—Snout longer, twice as long as the diameter of the eye; fingers half webbed; disks larger, considerably larger than the tympanum; hind limb much longer, the tibio-tarsal articulation reaching the tip of the snout, or beyond. Skin of head and scapular regions not, or but very slightly, thickened, without large pores. Lower lip with a white, below brown-edged, margin; a white streak along the outer edge of forearm and tarsus. Size larger—from snout to vent 115 millim.

Austro-Malaysia.

a. ♂.	New Guinea.	Dr. Coppinger [C.].
b. ♀.	Misol Island.	
c–d. ♂ ♀.	Duke of York Island.	Rev. G. Brown [C.].
e. ♂, skeleton.		Antarctic Expedition.

66. **Hyla infrafrenata.** (Plate XXVI. fig. 1.)

Hyla infrafrenata, *Günth. Ann. & Mag. Nat. Hist.* (3) xx. 1867, p. 56.

Agrees in every respect, in coloration as well as in structural characters, with *H. dolichopsis*, but the digital disks are much smaller than the tympanum. From snout to vent 45 millim.

North Australia.

a. Hgr.	Cape York.	(Type.)

67. **Hyla montana.**

Hyla montana, *Peters & Doria, Ann. Mus. Civ. Genov.* xiii. 1878, p. 423, pl. 7. f. 1.

Tongue subcordiform. Vomerine teeth in two groups between the choanæ. Snout rounded; canthus rostralis distinct; tympanum small. Fingers half webbed; no distinct rudiment of pollex; toes entirely webbed; disks moderate. Skin smooth above; belly and lower surface of thighs granulate. Upper surfaces olive-brown; yellow beneath, dotted with brown. From snout to vent 62 millim.

New Guinea.

68. **Hyla albopunctulata.** (Plate XXIV. fig. 4.)

Tongue small, circular, adherent. Vomerine teeth in a scarcely interrupted transverse series behind the level of the moderate-sized choanæ. Head moderate, broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis distinct; loreal region slightly concave; interorbital space much broader than the upper eyelid; tympanum very small, indistinct. Three outer fingers half webbed, or nearly so; no projecting rudiment of pollex; toes entirely webbed; disks well developed; subarticular tubercles very indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the eye. Skin smooth, slightly granulate on the belly and under the thighs. Reddish brown above (this colour produced by minute specks), dotted with white; a white line round the upper lip and along the outer edge of the forearm and tarsus; lower surfaces not coloured. Male with an external gular vocal sac. From snout to vent 33 millim.

Ecuador.

a. ♂.	Sarayacu, Ecuador.	Mr. Buckley [C.].
b–e. ♂.	Ecuador.	Mr. Buckley [C.].

69. **Hyla pulverata.**

Hyla pulverata, *Peters, Mon. Berl. Ac.* 1873, p. 614.

Tongue hardly nicked behind. Vomerine teeth in two groups between the choanæ. Snout as long as the diameter of the eye; canthus rostralis rounded; tympanum very small, rather indistinct. Three outer fingers extensively webbed, the membrane reaching the disks of the second and fourth; toes nearly entirely webbed. Skin smooth, belly and lower surface of thighs granulate. Colourless, with scattered white dots, more numerous on the sides of the head. From snout to vent 24 millim.

Chiriqui.

70. **Hyla reticulata.**

Hyla reticulata, *Espado, Jorn. Sc. Lisb.* ix. 1870, p. 61, *and Viaj. Pacif., Vert.* pl. 3 bis. f. 7.

Tongue subcordiform, slightly free behind. Vomerine teeth in two transverse groups between the choanæ. Head moderate; snout rounded; canthus rostralis scarcely distinct; tympanum rather indistinct. Fingers half, toes two-thirds webbed; disks well developed. Skin smooth, granulate on the belly and under the thighs. Green above, with large round orange spots. From snout to vent 33 millim.

Ecuador.

71. **Hyla microps.**

Hyla microps, *Peters, Mon. Berl. Ac.* 1872, p. 682.

Tongue heart-shaped. Vomerine teeth in a scarcely interrupted series on a level with the hinder edge of the choanæ. Snout as long as the diameter of the eye, truncate in front; loreal region as long as high; canthus rostralis distinct, though rounded; tympanum very small, one third the diameter of the eye. Neck a little narrower than the head. Three outer fingers nearly half webbed;

toes two-thirds webbed; disks of fingers larger than the tympanum. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches the tip of the snout. Head and upper eyelids with small tubercles; beneath granulate. Reddish chocolate-colour above; a dark triangular spot between the eyes; small spots and dots on the head; two large irregular dark spots on each side of the back; latter with small dots; axilla and loin surrounded by a black band; between these, along the side, two or three large irregular spots on reddish-white ground; limbs cross-barred; hinder side of thighs colourless or yellow, separated from the coloured upper surface by a black line; lower surfaces yellow, sides of belly and throat scantily dark-punctate. From snout to vent 30 millim.

Neufreiburg, Brazil.

72. Hyla leucophyllata.

Hyla leucophyllata, *Günth. Cat.* p. 112.
Hyla leucophyllata, *Beiris, Schrift. Berl. naturf. Freunde*, iv. p. 178, pl. 41. f. 4; *Shaw, Zool.* iii. p. 127; *Gravenh. Delic.* p. 31; *Dum. & Bibr.* p. 607; *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 243; *Cope, Proc. Amer. Philos. Soc.* 1869, p. 156.
Calamita leucophyllatus, *Schneid. Hist. Amph.* p. 168; *Merr. Tent.* p. 172.
Hyla frontalis, *Daud. Rain.* p. 24, pl. 7, *and Rept.* viii. p. 45.
—— elegans, *Wied, Abbild., and Beitr.* i. p. 529.
Hypsiboas leucophyllatus, *Tschudi, Batr.* p. 72.
Hyla triangulum, *Günth. Proc. Zool. Soc.* 1868, p. 489, pl. 38. f. 4.
? Hyla ebraccata, *Cope, Proc. Ac. Philad.* 1874, p. 68.

Tongue circular, slightly nicked and free behind. Vomerine teeth in two small groups between the choanæ. Head rather small, broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis distinct; loreal region nearly vertical, not concave; interorbital space broader than the upper eyelid; tympanum more or less distinct, half the diameter of the eye. Fingers nearly two-thirds webbed; no projecting rudiment of pollex; toes nearly entirely webbed; disks nearly as large as the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth, granulate on the belly and under the thighs. Upper part of head and back yellowish or whitish; sides of head and body, and a large marking on upper surface, brown, the two colours sharply defined; this brown marking represents generally a hourglass-shaped figure, which may be prolonged posteriorly into two branches confluent with the brown of the sides, thus enclosing an oval light space on the pelvic region. In one specimen (*a*) the brown mark is spotted with white; in another (*h*) it is reduced to a triangular isoscelous spot on the head and nape; another specimen (*b*) lacks entirely the brown marking, and the upper surfaces are uniform whitish; specimens *i* and *k* show the reverse, the brown covering the upper surfaces, the white being reduced to a triangular spot on the forehead, a spot on scapular region, another, very small, on end of coccyx, and a few spots across the limbs. The arms are brown, generally white-spotted; the tibiæ are white and brown; the thighs not coloured; the lower surfaces immaculate. From snout to vent 38 millim.

S. America.

a, b. Hgr.	Panama.	
c–e. ♀.	Surinam.	
f. ♀.	Cayenne.	
g. ♀.	Brazil.	Dr. Gardiner [C.].
h–i. ♀.	Sarayacu, Ecuador.	Mr. Buckley [C.].
k. ♀.	Paitanga, Ecuador.	Mr. Buckley [C.].
l. Hgr.	——?	Dr. A. Günther [P.]. (Type of *Hyla triangulum.*)

73. Hyla aurantiaca.

Hyla aurantiaca, *Günth. Cat.* p. 106.

Hyla aurantiaca, *Daud. Rain.* p. 28, pl. 9. f. 3, *and Rept.* viii. p. 57; *Dum. & Bibr.* p. 610; *Burmeist. Erläuter.* p. 105; *Peters, Mon. Berl. Ac.* 1871, p. 404, & 1872, p. 683.
—— lactea, *Daud. Rain.* p. 30, pl. 10. f. 2, *and Rept.* viii. p. 62.
Calamita aurantiacus, *Merr. Tent.* p. 172.
—— lacteus, *Merr. l. c.*
Dendrohyas rubra, *Tschudi, Batr.* p. 74.
Sphænorhynchus lacteus, *Tschudi, l. c.* p. 71.
Dryomelictes aurantiacus, *Cope, Proc. Ac. Philad.* 1865, p. 194.
Scytopis aurantiacus, *Cope, ibid.* 1874, p. 123.

Tongue circular, entire and free behind. Vomerine teeth in two short straight series a little behind the level of the choanæ. Head small; snout pointed, projecting a good deal beyond the mouth-opening, once and a half as long as the diameter of the eye; canthus rostralis angular; loreal region vertical; eyes not very prominent; interorbital space much broader than the upper eyelid; tympanum moderately distinct, about half the diameter of the eye. Fingers two-thirds webbed; no projecting rudiment of pollex; toes entirely webbed; disks as large as the tympanum; subarticular tubercles moderate; a slight fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the eye. Skin smooth or minutely granulate above; belly and lower surface of thighs granulate; a strong fold across the chest; a short cutaneous flap on each side of the vent; a distinct fold along the outer edge of the tarsus. Uniform yellowish or pinkish; a reddish-brown streak along the canthus rostralis. From snout to vent 43 millim.

Guianas; Brazil.

a. ♀.	Demerara.	Sir W. Holmes [P.].
b–c. ♀.	British Guiana.	Mr. Leadbeater [C.].
d. ♀.	Pebas.	H. W. Bates, Esq. [C.].

74. Hyla bipunctata.

Hyla capistrata, *Günth. Cat.* p. 106.
Hyla bipunctata, *Spix, Spec. Nov. Test. Ran.* p. 36, pl. 9. f. 3; *Peters, Mon. Berl. Ac.* 1872, p. 213.
Scinax bipunctata, *Wagl. Syst. Amph.* p. 201.
Hyla capistrata, *Reuss, Mus. Senckenb.* i. p. 58, pl. 3. f. 4.
—— pumila, *Dum. & Bibr.* p. 565.

Tongue circular, nicked and free behind. Vomerine teeth in two small groups between the choanæ. Head moderate, as long as broad; snout rounded, as long as the diameter of the orbit; canthus rostralis distinct; loreal region not concave; interorbital space broader than the upper eyelid; tympanum distinct, somewhat more than half the diameter of the eye. Fingers half webbed; no projecting rudiment of pollex; toes nearly entirely webbed; subarticular tubercles rather indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or a little beyond. Skin smooth, granulate on the belly and under the thighs. Purplish red above, uniform or with symmetrical darker markings; sides of head dark purple, white-spotted; thighs not coloured; tibia with dark cross bars; beneath whitish, immaculate. Male with an external subgular vocal sac. From snout to vent 25 millim.

Brazil.

a, b. ♂ ♀.	Brazil.

75. Hyla minuta.

Hyla minuta, *Peters, Mon. Berl. Ac.* 1872, p. 680.

Very closely allied to *H. bipunctata*, but the snout is a little longer and more depressed, and the coloration is different. Yellowish or olive-brown above; generally a hourglass-shaped dark marking beginning between the eyes, followed by a cross band on the sacrum; the hourglass-shaped marking may be broken up into two triangular spots; tibiæ cross-barred; these markings generally with a narrow light margin. Male with an external gular vocal sac. From snout to vent 20 millim.

Brazil.

a–b. ♂ ♀.	Brazil.	Lord Stuart [P.].

76. Hyla rhodopepla.

Hyla rhodopepla, *Günth. Cat.* p. 112, pl. vii. f. E.

Tongue circular, slightly nicked and slightly free behind. Vomerine teeth in two small groups between the choanæ. Head moderate, broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis indistinct; loreal region not concave; interorbital space broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Fingers one-third webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks smaller than the tympanum; subarticular tubercles rather indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin smooth, granulate on the belly and under the thighs. Rose-coloured above, the back scarcely dotted with violet; a purplish-brown band round the snout through the eye along the sides to the loin; upper arm and thigh not coloured; beneath whitish, immaculate. From snout to vent 27 millim.

Ecuador.

a. Hgr.? Andes of Ecuador. Mr. Fraser [C.]. (Type.)

77. Hyla strigilata.

Hyla strigilata, *Spix, Spec. Nov. Test. Ran.* p. 38, pl. 10. f. 3; *Peters, Mon. Berl. Ac.* 1872, pp. 214 & 680.

Tongue subcircular, openly emarginate and very slightly free behind. Vomerine teeth in two small transverse groups between the choanæ. Head as long as broad; snout prominent, longer than the diameter of the eye; loreal region slightly concave; tympanum distinct, one third the diameter of the eye. Outer fingers one-fourth webbed; toes half webbed; disks and subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Upper surfaces slightly tubercular; belly and lower surface of thighs granulate. Upper surfaces brown-spotted; limbs cross-barred; loins blackish, light-spotted; beneath, marbled with brown. From snout to vent 42 millim.

Brazil.

78. Hyla peronii.

Hyla peronii, *Günth. Cat.* p. 112.
Dendrohyas peronii, (*Bibr.*) *Tschudi, Batr.* p. 75.
Hyla peronii, *Dum. & Bibr.* p. 569; *Günth. Proc. Zool. Soc.* 1863, p. 250, pl. 30. f. A & B; *Steindachn. Novara, Amph.* p. 60; *Keferst. Arch. f. Naturg.* 1868, p. 282, pl. 8. f. 30 & 31.

Tongue subcircular or suboval, free and slightly nicked behind. Vomerine teeth in two transverse groups between the choanæ. Head moderate, a little broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis rounded; loreal region oblique, slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers half webbed, or nearly so; no distinct rudiment of pollex; toes nearly entirely webbed; disks large, those of the fingers somewhat more than half the diameter of the eye; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or between that point and the eye. Upper surfaces more or less tuberculate, sometimes nearly smooth; a fold from the eye to the shoulder; lower surfaces granulate; a strong fold across the chest. Brown or olive above, more or less distinctly dotted or marbled with darker; groin and sides of thighs, sometimes also axilla, black-and yellow-marbled; sometimes a rather indistinct light vertebral line; beneath whitish, the throat frequently variegated with brown. Male with an internal subgular vocal sac; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 57 millim.

Northern and Eastern Australia; Tasmania.

a. ♀.	Port Essington.	Earl of Derby [P.].
b, c. ♂ & hgr.	N.E. Australia.	
d. ♀.	Rockhampton.	Herr Dämel [C.].
e. ♀.	Rockhampton.	Godeffroy Mus.
f–g. ♂ ♀.	Sydney.	G. Krefft, Esq. [P.].
h–i. Hgr. & yg.	Sydney.	
k. ♀.	Long Bay, near Sydney.	J. Brazier, Esq. [P.].
l. ♀.	Clarence River.	G. Krefft, Esq. [P.].
m–n. Several spec., ♂ ♀.	New South Wales.	G. Krefft, Esq. [P.].
o. ♀.	Tasmania.	Sir A. Smith [P.].

79. Hyla senicula.

Hyla marmorata, *Burmeist, Erläuter.* p. 93, pl. 31. f. 1.
—— senicula, *Cope, Proc. Ac. Philad.* 1868, p. 111.
—— vermiculata, *Peters, Mon. Berl. Ac.* 1872, p. 211.

Tongue subcircular, slightly nicked and a little free behind. Vomerine teeth in two groups between the choanæ. Head broader than long; snout rounded, a little longer than the diameter of the orbit; canthus rostralis indistinct; interorbital space broader than the upper eyelid; tympanum very distinct, about half the diameter of the eye. Fingers three-fourths webbed; no projecting rudiment of pollex; toes entirely webbed; disks about as large as the tympanum; subarticular tubercles rather indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin nearly smooth above, granulate beneath; a denticulated fringe along the outer edge of the forearm and tarsus. Brownish above, with insuliform dark spots; beneath whitish, immaculate. From snout to vent 37 millim.

Brazil.

a. ♀.	Brazil.	Lord Stuart [P.]

80. Hyla marmorata.

Seba, i. 17. 4–5.
Bufo marmoratus, *Laur. Syn. Rept.* p. 29.
Hyla marmorata, *Daud. Rain.* p. 54, pl. 12, *and Rept.* viii. p. 71; *Dum. & Bibr.* p. 571; *Guichen. in Casteln. Anim. nouv. ou rares,*

Rept. p. 85; *Cope, Proc. Ac. Philad.* 1868, p. 111; *Peters, Mon. Berl. Ac.* 1871, p. 403.
Calamita marmoratus, *Merr. Tent.* p. 174.
Lophopus marmoratus, *Tschudi, Batr.* p. 73.

Tongue circular, free and slightly nicked behind. Vomerine teeth forming a straight, transverse, interrupted series on a level with the hinder edge of the choanæ. Head broader than long; snout very short, scarcely longer than the diameter of the orbit, rounded; canthus rostralis absent; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers webbed to the disks, which are as large as the tympanum; no projecting rudiment of pollex; toes rather short, webbed to the disks; latter a little smaller than those of fingers; subarticular tubercles very indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or a little beyond. Upper surfaces slightly warty; belly and lower surface of thighs granulate; a denticulated fringe along the outer side of forearm and tarsus. Reddish brown above, marbled with dark brown; hind limbs with dark cross bars; lower surfaces bright saffron, covered with small round black spots; lower surface of forearm, fingers, tibia, tarsus, and toes black; web black and saffron. Male with an internal subgular vocal sac. From snout to vent 52 millim.

S. America.

a–b. ♂ ♀.	Ecuador.	Mr. Buckley [C.].
c. ♀.	Paitanga.	Mr. Buckley [C.].
d. ♂.	Canelos.	Mr. Buckley [C.].

81. **Hyla dasynotus.**

Hyla dasynotus, *Günth. Proc. Zool. Soc.* 1868, p. 488, pl. 38. f. 2.

Tongue subcircular, nicked and slightly free behind. Vomerine teeth in two small groups between the choanæ, which are very small. Head small, as long as broad; snout short, as long as the diameter of the orbit, rounded; canthus rostralis indistinct; loreal region very oblique, slightly concave; interorbital space as broad as the upper eyelid; tympanum rather indistinct, half the diameter of the eye. Fingers half webbed; no projecting rudiment of pollex; toes nearly entirely webbed; disks as large as the tympanum; subarticular tubercles small. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. The skin, from the fronto-parietals along the spine to the sacrum, immovable and rough with bony deposits; lower surfaces granulate; an indistinct fringe along the outer edge of the forearm and tarsus. Brownish above, the rough parts of a darker colour; sides of the abdomen marbled with black and white; a black streak along the canthus rostralis and above the tympanum; a black spot anteriorly below the eye; a dark cross band between the eyes; femur deep black, with white ovate spots or cross bars; fore limbs and lower legs with brown cross bands; lower parts whitish, throat brown. Male with two large external vocal sacs, one on each side of the throat. From snout to vent 32 millim.

Brazil.

a. ♂.	Brazil.	Dr. A. Günther [P.]. (Type.)

82. **Hyla parviceps.** (PLATE XXV. fig. 3.)

Tongue circular, nicked and free behind. Vomerine teeth in two transverse groups just behind the level of the choanæ. Head very small, a little broader than long; snout as long as the diameter of the eye, elevated, vertically truncate; canthus rostralis distinct; loreal region nearly vertical; eye large; interorbital space broader than the upper eyelid; tympanum distinct, one third the diameter of the eye. Three outer fingers one-third webbed; no projecting rudiment of pollex; toes nearly entirely webbed; disks as large as the tympanum; subarticular tubercles very indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin smooth, indistinctly granulate on the belly. Olive-brown above, turning to reddish on the back, with darker markings, viz. a broad streak along the canthus rostralis, a vase-shaped marking on the back of the head and nape (the anterior border between the eyes), and two oblique streaks on sacral region; limbs and sides blackish, with large white spots; a large white space on throat and front part of belly white, the remaining parts blackish. From snout to vent 26 millim.

Ecuador.

a. ♀.	Sarayacu.	Mr. Buckley [C.].

83. **Hyla sordida.**

Hyla sordida, *Peters, Mon. Berl. Ac.* 1863, p. 460.

Tongue round, openly emarginate behind. Vomerine teeth in two small transverse series in the middle between the choanæ. Snout rounded, as long as the diameter of the eye; canthus rostralis rounded; tympanum one third the diameter of the eye. Three outer fingers about two-thirds webbed; toes nearly entirely webbed; disks well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin smooth above, granulate beneath. Bluish grey above, when seen with a magnifier finely punctate; the sides of the body and the hinder side of the thighs finely white- and brown-marbled; limbs cross-barred; beneath white. Male with a subgular vocal sac. From snout to vent 34 millim.

Veragua.

84. Hyla nigripes.

Hyla nigripes, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 104, pl. 23. f. 7.

Tongue subcircular, openly emarginate and slightly free behind. Vomerine teeth in two short transverse series between the choanæ. Head moderate, as long as broad; snout rounded, slightly longer than the diameter of the orbit; canthus rostralis distinct; loreal region oblique, slightly concave; interorbital space slightly broader than the upper eyelid; tympanum distinct, nearly half the diameter of the eye. Three outer fingers nearly half webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks smaller than the tympanum; subarticular tubercles little developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granulate beneath. Dark olive-brown above; sides of body finely black- and white-marbled; greyish beneath. From snout to vent 30 millim.

Costa Rica.

a. ♀.	Costa Rica.

85. Hyla palliata.

Hyla palliata, *Cope, Proc. Ac. Philad.* 1863, p. 47.

Tongue oval, nicked. Vomerine teeth in a short uninterrupted series behind the posterior margin of the choanæ. Snout prominent, truncate; loreal region not concave; the distance from the nostril to the orbit equals the diameter of the latter, and is less than the width of the interorbital space; tympanum one sixth the size of the eye. Three outer fingers one-third webbed; a distinct rudiment of pollex; toes webbed to penultimate phalange. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the middle of the orbit. Skin smooth above, not granulated in the gular region. Extremities, lower surfaces, loreal and labial regions greyish brown; upper surface of head and body pale ochreous, abruptly separated from the other colour all round. Male with a vocal sac. From snout to vent 19 millim.

Paraguay.

86. Hyla polytænia.

Hyla rubicundula, (*non Reinh. & Lütk.*) *Günth. Proc. Zool. Soc.* 1868, p. 489, pl. 40. f. 3.
—— polytænia, *Cope, Proc. Amer. Philos. Soc.* 1869, p. 164.
—— striata, *Peters, Mon. Berl. Ac.* 1872, p. 681.

Tongue subcircular, entire, scarcely free behind. Vomerine teeth in two small groups behind the level of the choanæ. Head moderate, a little broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis angular; loreal region not very oblique, concave; interorbital space broader than the upper eyelid; tympanum distinct, one third the diameter of the eye.

Three outer fingers nearly one-third webbed; a distinct rudiment of pollex; toes half webbed; disks as large as the tympanum; subarticular tubercles little developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth, granulate on the belly and under the thighs; heel with a short dermal appendage. Light olive, with numerous parallel brown longitudinal bands on the body and limbs; these bands proceed from the snout, are unequal in width, and more or less distinctly edged with white; the broader of the bands are sometimes broken up in series of ovate spots; a blackish band, edged with white above and below, and longitudinally traversed by another white band, from the nostril to the loin. Male with an internal subgular vocal sac. From snout to vent 31 millim.

Brazil.

a–b. ♂.	Brazil.	Dr. Gardiner.

87. Hyla rubicundula.

Hyla rubicundula, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 197; *Cope, Proc. Amer. Philos. Soc.* 1869, p. 164; *Peters, Mon. Berl. Ac.* 1872, p. 681.

Differs from the preceding chiefly in having a shorter snout and a much smaller tympanum. Pinkish red above; a dark lateral band; thighs not coloured. From snout to vent 21 millim.

Lagoa Santa, Brazil.

88. Hyla bracteator.

Hyla bracteator, *Hensel, Arch. f. Naturg.* 1867, p. 159; *Peters, Mon. Berl. Ac.* 1872, p. 681.
—— leucotænia, *Günth. Proc. Zool. Soc.* 1868, p. 489, pl. 40. f. 4.

Tongue a short oval, not distinctly nicked, and slightly free behind. Vomerine teeth in two small rounded groups, slightly beyond the level of the choanæ. Head moderate, scarcely broader than long; snout rounded, a little longer than the diameter of the orbit; canthus rostralis angular; loreal region not very oblique; interorbital space a little broader than the upper eyelid; tympanum moderately distinct, nearly half the diameter of the eye. Fingers webbed at the base; a distinct rudiment of pollex, forming an acute claw in the male; toes half webbed; disks a little smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granulate on the belly and under the thighs. Light greyish olive above; a white, inferiorly dark-edged line along the canthus rostralis, through the eye and the side of the body; another white line along the outer edge of the tibia; beneath immaculate. Male with a large external gular vocal sac. From snout to vent 38 millim.

Southern Brazil.

a. ♂.	Rio Grande.	(Type of *H. leucotænia.*)

89. **Hyla guatemalensis.**

Plectrohyla guatemalensis, *Brocchi, Bull. Soc. Philom.* (7) i. p. 92.
Cauphias guatemalensis, *Brocchi, ibid.* p. 129.

Tongue round, entire, free behind. Vomerine teeth in two small groups between the choanæ. Snout rounded; canthus rostralis distinct; loreal region very high, concave; tympanum hidden. A rudiment of web between the three outer fingers; a much developed, claw-like rudiment of pollex; toes entirely webbed; disks well developed. Sides with glandular folds; beneath granulate; a fold across the chest. Grey above, with rounded markings on the back; limbs marbled with green; yellowish white beneath. From snout to vent 59 millim.

Guatemala.

90. **Hyla crassa.**

Cauphias crassus, *Brocchi, Bull. Soc. Philom.* (7) i. p. 130.

Tongue subcircular, nicked and slightly free behind. Vomerine teeth in two groups between the choanæ. Head short and thick; snout rounded; canthus rostralis short, rounded; loreal region much elevated, a little concave; tympanum hidden. Fingers free; no projecting rudiment of pollex; toes entirely webbed. Skin of upper surfaces shagreened; lower surfaces granulate; a fold from the eye to the shoulder; a fold across the chest. Grey above; flanks and limbs marbled. Male with a vocal sac. From snout to vent 66 millim.

Mexico.

91. **Hyla plicata.**

Hyla plicata, *Brocchi, Bull. Soc. Philom.* (7) i. p. 126.

Tongue oval, nicked and free behind. Vomerine teeth on a level with the front edge of the choanæ. Head much depressed, broader than long; snout rounded; canthus rostralis angular; eyes very large; tympanum distinct, one third the diameter of the eye. Fingers free, a rudiment of web between the first and second (!); toes half webbed; disks small, not half the diameter of the tympanum. Skin smooth above, granulate beneath; a fold from the eye along the side; a strong fold across the chest. Green above, back and limbs spotted. From snout to vent 44 millim.

Mexico.

92. **Hyla spinosa.**

Hyla spinosa, *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 239, pl. 9. f. 1, *and Novara, Amph.* p. 62.

Tongue subcircular, slightly emarginate behind, adherent. Vomerine teeth between the choanæ, in two small groups slightly convergent backwards. Head short and broad; snout vertically truncate; canthus rostralis obtuse; loreal region slightly concave; tympanum very distinct, not much smaller than the eye; a strong and narrow glandular prominence from the eye to the shoulder, over the tympanum, pierced by two pointed bony spines. Fingers free; toes webbed at the base; disks much smaller than the tympanum. Hind limb once and a half the length of head and body. Skin of back and sides thick and finely wrinkled; belly and lower surface of thighs granulate. Green above; sides of head and body with large confluent violet spots; limbs crossed-barred with violet; reddish brown beneath. From snout to vent 39 millim.

Brazil?

93. **Hyla nebulosa.**

Hyla luteola, *Günth. Cat.* p. 107.

Hyla nebulosa, *Spix, Spec. Nov. Test. Ran.* p. 39, pl. 10. f. 4.

—— luteola, *Burmeist. Erläuter.* p. 107, pl. 31. f. 3; *Peters, Mon. Berl. Ac.* 1872, pp. 217 & 770.

Tongue circular, entire. Vomerine teeth in two groups between the choanæ. Head broader than long; snout rounded; loreal region slightly concave; tympanum much smaller than the eye. Fingers webbed at the base; toes half webbed; disks large. Skin smooth above, granulate on the belly and under the thighs. Yellow above, finely brown-punctate; sides of the belly and of the thighs with vertical purplish-blue bars; beneath whitish, with slight grey variegations. From snout to vent 48 millim.

Brazil.

94. **Hyla labialis.**

Hyla labialis, *Peters, Mon. Berl. Ac.* 1863, p. 463.

Tongue very broad, heart-shaped, openly emarginate. Vomerine teeth in two transverse series in the middle between the choanæ. Snout obtuse, as long as the diameter of the eye; canthus rostralis distinct; tympanum hardly distinct, two fifths the diameter of the eye. Fingers webbed at the base; toes nearly entirely webbed; disks moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth above, granulate beneath. Olive-brown above, changing to olive-green on the sides; a blackish-brown band from the tip of the snout through the eye to the middle of the side; the lips have a very narrow brown margin; sides of the thighs reticulated with brown; belly yellow; throat ochraceous. Male with a subgular vocal sac. From snout to vent 34 millim.

Bogotá.

95. **Hyla auraria.**

Hyla auraria, *Peters, Mon. Berl. Ac.* 1873, p. 615.

Tongue openly emarginate. Vomerine teeth in two transverse series on a level with the hinder edge of the choanæ. Snout as long as the diameter of the eye; canthus rostralis rounded; loreal region oblique; tympanum vertically oval, its greatest diameter two thirds that of the eye. Three outer fingers webbed at the base;

toes three-fourths webbed; disks of fingers rather large. Skin smooth, belly and lower surface of thighs granulate. Greenish yellow above; a straightly defined dark spot beginning between the eyes, evanescent on the back; limbs with irregular dark cross bands; beneath dirty yellow. From snout to vent 30 millim.

S. America.

96. Hyla squirella.

Hyla squirella, *Günth. Cat.* p. 111.

Hyla squirella, *Daud. Rain.* p. 18, pl. 3. f. 2, *and Rept.* viii. p. 34; *Leconte, Ann. Lyc. N. York*, i. p. 279; *Harl. Journ. Ac. Philad.* v. p. 342; *Holbr. N.-Amer. Herp.* iv. pl. 30; *Dekay, New York Fauna, Rept.* p. 72, pl. 21. f. 53; *Leconte, Proc. Ac. Philad.* 1855, p. 429.
Calamita squirella, *Merr. Tent.* p. 171.
Auletris squirella, *Wagl. Syst. Amph.* p. 201.
Hyla squirella, *Dum. & Bibr.* p. 589.

Tongue circular, slightly nicked and free behind. Vomerine teeth in two small groups between the choanæ. Head moderate, a little broader than long; snout rounded, a little longer than the diameter of the eye; canthus rostralis distinct, loreal region slightly concave; interorbital space a little broader than the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers very slightly webbed at the base; no prominent rudiment of pollex; toes half webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin smooth above, granulate beneath; a strong fold across the chest. Olive above, spotted with darker; limbs cross-barred; upper lip white; beneath immaculate. From snout to vent 39 millim.

S.E. United States.

a. ♀. Georgia.

97. Hyla femoralis.

Hyla femoralis, *Daud. Rain.* p. 18, pl. 3. f. 1, *and Rept.* viii. p. 32; *Leconte, Ann. Lyc. N. York*, i. p. 280; *Harl. Journ. Ac. Philad.* v. p. 342; *Holbr. N.-Amer. Herp.* iv. pl. 31; *Leconte, Proc. Ac. Philad.* 1855, p. 428.
Calamita femoralis, *Merr. Tent.* p. 171.
Auletris femoralis, *Wagl. Syst. Amph.* p. 201.
Hyla squirella, part., *Dum. & Bibr.* p. 589.

Appears to be specifically distinct from *H. squirella*. The web between the fingers is more distinct, the hind limbs are rather shorter, the coloration is different, and the size is smaller. Upper lip not white-edged; hinder side of thighs blackish, white-spotted. From snout to vent 29 millim.

S.E. United States.

a-d. ♂ & hgr. N. America. E. Doubleday, Esq. [P.].

98. Hyla pickeringii.

Acris pickeringii, *Günth. Cat.* p. 71.
Hylodes pickeringii, *Holbr. N.-Amer. Herp.* iv. p. 135, pl. 34.
Hyla pickeringii, *Leconte, Proc. Ac. Philad.* vii. 1854, p. 429.

Tongue heart-shaped, free behind. Vomerine teeth in two small groups just behind the level of the choanæ. Head moderate, as long as broad; snout subacuminate, once and a half as long as the diameter of the eye; canthus rostralis distinct; loreal region slightly concave; interorbital space broader than the upper eyelid; tympanum small, hardly visible. Fingers free; no projecting rudiment of pollex; toes not quite half webbed; disks and subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth or minutely tuberculate above, granulate beneath. Greyish above, dotted with darker, and with angular symmetrical lines; a dark streak from the tip of the snout through the eye to the middle of the side; tibiæ cross-barred; beneath whitish, immaculate. Male with an internal subgular vocal sac. From snout to vent 17 millim.

United States (Eastern Region).

a. ♂.	N. America.

99. Hyla curta.

Hyla curta, *Cope, Proc. Ac. Philad.* 1866, p. 313.

Tongue free behind. Vomerine teeth in two groups between the choanæ. Snout projecting; canthus rostralis well defined, straight; loreal region not concave; tympanum one third the diameter of the eye. Fingers and toes stout, the former free, the latter half webbed; disks well defined. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the anterior margin of the orbit. Skin smooth or sparsely and finely tuberculate above. Above ashy brown, with a dark interocular triangle and a broad dorso-lateral band on each side, often broken into elongate spots; limbs punctulate and cross-barred. Male without vocal sac. From snout to vent 95 millim.

Cape St. Lucas, Lower California.

100. Hyla elæochroa.

Hyla elæochroa, *Cope, Journ. Ac. Philad.* (n. s.) viii. p. 105, pl. 26. f. 3.

Tongue longer than wide. Vomerine teeth between the choanæ, in two short series directed backwards towards the median line. Snout elongate and plane above, and slightly projecting. Eye large, four or five times the area of the membranum tympani. Fingers entirely free; toes two-thirds webbed; disks large. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Colour above and below a uniform olivaceous, without spots; a pale area below the eye; lip faintly marbled. From snout to vent 26 millim.

Costa Rica.

101. Hyla miotympanum.

Hyla miotympanum, *Cope, Proc. Ac. Philad.* 1863, p. 47; *Peters, Mon. Berl. Ac.* 1871, p. 651.
—— microtis, *Peters, Mon. Berl. Ac.* 1869, p. 880.

Tongue slightly emarginate. Vomerine teeth in two elongate, slightly oblique fasciculi between the choanæ, converging posteriorly. Snout broadly rounded; canthus rostralis short; loreal region oblique; tympanum extremely small, scarcely distinct. Outer fingers one-fourth, toes extensively webbed; disks larger than the tympanum. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Skin smooth above, granulate beneath. Purplish ash above, with or without a few lighter specks and indistinct darker reticulations; extremities paler, not barred; a light border from heel to toes, another bounding superiorly a subanal spot; superior labial border and lateral stripe bright yellow, the latter sometimes not well separated from the abdominal shade; lower surfaces yellowish. From snout to vent 37 millim.

Jalapa, Mexico.

102. Hyla gracilipes.

Hyla gracilipes, *Cope, Proc. Ac. Philad.* 1865, p. 194.

Tongue elongate, free behind. Vomerine teeth in two small groups between the choanæ. Head flat, longer than broad; canthus rostralis little concave; eyes little prominent, one half tympanic disk. Fingers elongate, free; toes webbed at base only, remarkably elongate; the foot from tarsus a little longer than the tibia, and equalling, from axilla to middle of origin of femur, the width of the head. Colour above bright leek-green, with a brown band from the nostril through the tympanum to the middle of the side, white-bordered above, and a short band on each side of the ilium, white-bordered; femora not spotted behind; limbs not cross-banded; upper lip with a brown border; beneath whitish. From snout to vent 15 lines.

Mexican tableland, N.E. of city of Mexico.

103. Hyla staufferi.

Hyla staufferi, *Cope, Proc. Ac. Philad.* 1865, p. 195.

Tongue rounded, a border only free. Vomerine teeth in fasciculi between choanæ. Head plane, depressed; snout very prominent, rounded; canthus rostralis weak, straight; lores flat, oblique. Fingers and toes short, the former free, the latter half webbed; disks large. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the front of the orbit. Skin smooth above, sides rugulose. Dark olive above, with a short longitudinal black bar over each scapula, and one from eye to eye, with a trace along the coccyx; below yellowish. Male with a large gular vocal sac. From snout to vent 28 millim.

Mexico.

104. Hyla punctariola.

Hyla punctariola, *Peters, Mon. Berl. Ac.* 1863, p. 462; *Cope, Journn. Ac. Philad.* (n. s.) viii. 1876, p. 106.

Tongue heart-shaped, openly emarginate. Vomerine teeth in two small groups behind the level of the choanæ. Snout slightly longer than the diameter of the eye; tympanum somewhat more than one third the diameter of the eye. Fingers quite free; toes three-fourths webbed; disks moderate. The hind limb being carried forwards along the body, two thirds of the tarsus extend beyond the tip of the snout. Skin smooth. Brown above; a cross band between the eyes and a large spot on the snout; upper lip with whitish bars alternating with brown ones; limbs cross-barred with dark brown; fingers and toes cross-barred with brown and white; beneath dirty white; the throat brown, dotted with white. From snout to vent 22 millim.

Veragua.

Mr. Cope, *l. c.*, distinguishes three varieties of coloration, which he describes as "subspecies," suspecting, however, that they may be true species. These are named *pictipes*, *mœsta*, and *monticola*. All three from Costa Rica. Mr. Cope describes these Costa-Rican specimens as having a web at the base of the outer fingers, and the "heel extends nearly or quite to the end of the muzzle," thus differing widely from the original description by Prof. Peters.

105. Hyla bistincta.

Hyla bistincta, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 87.

Vomerine teeth in two small groups between the choanæ. Head, particularly the interorbital region, broad and flat; canthus rostralis distinct; tympanum exceedingly small, one fifth the diameter of the eye, overhung by a thick dermal fold. Fingers free; toes not fully webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Dark bluish plumbeous above, yellow beneath; sides marbled with the two colours; hinder side of thighs pale brown, with a few yellow specks along the superior border. Male with rugosities on the inner side of the first finger during the breeding-season. From snout to vent 45 millim.

Vera Cruz.

106. Hyla depressiceps. (Plate XXV. fig. 4.)

Tongue circular, entire, scarcely free behind. Vomerine teeth in two small transverse groups between the rather large choanæ. Head much depressed, as long as broad ; snout rounded, once and a half as long as the diameter of the eye ; canthus rostralis very indistinct ; loreal region not concave ; interorbital space a little broader than the upper eyelid ; tympanum very distinct, half the diameter of the eye. Fingers webbed at the base ; no projecting rudiment of pollex ; toes three-fourths webbed ; disks as large as the tympanum ; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth, granulate on the belly and under the thighs. Light brown above, dotted with dark brown and whitish ; a streak along the canthus rostralis, a cross band between the eyes, and some large spots on the back dark brown ; limbs black and whitish marbled ; whitish beneath, immaculate. From snout to vent 40 millim.

Ecuador.

a–b. ♀.	Ecuador.	Mr. Buckley [C.].

107. Hyla phæota.

Hyla phæota, *Cope, Proc. Ac. Philad.* 1862, p. 358.

Tongue round, entire. Vomerine teeth in two nearly transverse series between the large choanæ. Head broad, depressed ; canthus rostralis rounded, concave ; eye large, prominent, tympanum more than half its extent. Three outer fingers slightly webbed ; nearly three phalanges of the fourth toe free, the web, however, margining its outer side. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin of upper surfaces entirely smooth ; a strong fold from orbit over tympanum. Colour above greyish brown, shaded with a pale plumbeous tint ; abdomen, upper jaw, postorbital region, and the borders of the upper eyelid, tarsus and antebrachium, and of a brown spot near the vent, white ; a dark brown line on the canthus rostralis, and a band between the eye ; a longitudinal band or series of spots on the back, which bifurcates anteriorly ; a spot on the coccyx ; a dark-brown band from angle of eye to scapular region, involving the whole of the tympanum ; femur with narrow cross bands, posterior face reticulate or unicolor ; tibiæ more broadly cross-banded ; sides with brownish vermiculations ; gular region brown-shaded. Male with a vocal sac. From snout to vent 1 in. 10 lines.

Turbo, Colombia.

108. Hyla spilomma.

Hyla spilomma, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 86.

Tongue wide and entire. Vomerine teeth in transverse series behind the level of the choanæ. Head broad, snout very short; canthus rostralis obsolete; tympanum two fifths the diameter of the eye. Fingers free; toes quite short, only about half webbed; disks nearly as large as the tympanum. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the posterior portion of the orbit. Superior and lateral integument thickened, and studded on the back with rather large, obtuse warts. Light purplish brown, with or without a broad blackish band extending from above the tympanum to the groin, separating the darker dorsal region from the sides. From snout to vent 38 millim.

Vera Cruz.

109. Hyla acuminata.

Hyla acuminata, *Cope, Proc. Ac. Philad.* 1862, p. 354.
Scytopis acuminatus, *Cope, Proc. Ac. Philad.* 1874, p. 124.

Tongue subcircular or suboval, slightly nicked and scarcely free behind. Vomerine teeth in a straight series between the large choanæ. Head depressed, longer than broad; snout subacuminate, twice as long as the diameter of the eye; canthus rostralis indistinct; loreal region not concave; eye rather small; interorbital space broader than the upper eyelid; tympanum very distinct, a little more than half the diameter of the eye. Fingers free; no projecting rudiment of pollex; toes three-fourths webbed, first quite free; disks nearly as large as the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper surfaces tubercular, the tubercles most distinct on the head and the sides of the body; heel with a conical tubercle; lower surfaces granulate. Brown above, marbled with darker; limbs cross-barred; whitish beneath, throat and chest dotted with brown. From snout to vent 40 millim.

S. America.

a. ♀.	British Guiana.	
b. ♀.	Surinam.	Mr. Bartlett [C.].
c. ♀.	Santarem.	Mr. Wickham [C.].

110. Hyla rubra.

Hyla rubra, *Günth. Cat.* p. 110.
Hyla rubra, *Daud. Rain.* p. 26, pl. 9, *and Rept.* viii. p. 53; *Latr. Rept.* ii. p. 176; *Dum. & Bibr.* p. 592; *Burmeist. Erläutr.* p. 109; *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 196; *Steindachn. Novara, Amph.* p. 60; *Peters, Mon. Berl. Ac.* 1872, pp. 207 & 218.
Calamita ruber, *Merr. Tent.* p. 171.
Hyla lateristriga, *Spix, Spec. Nov. Test. Ran.* p. 32, pl. 6. f. 4.
—— cærulea, *Spix, l. c.* p. 37, pl. 10. f. 1.
—— x-signata, *Spix, l. c.* p. 40, pl. 11. f. 3.
Auletris rubra, *Wagl. Syst. Amph.* p. 201.
Hyla cynocephala, *Dum. & Bibr.* p. 558; *Peters, Mon. Berl. Ac.* 1873, p. 613.

Hyla conirostris, *Peters, Mon. Berl. Ac.* 1863, p. 464.
? Scytopis allenii, *Cope, Proc. Amer. Philos. Soc.* 1869, p. 162.
Scytopis cryptanthus, *Cope, Proc. Ac. Philad.* 1874, p. 123.
Dendrohyas rubra, *Tschudi, Batr.* p. 74.
Scytopis x-signatus, *Cope, l. c.* p. 124.
—— ruber, *Cope, l. c.*

Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two small groups between the choanæ. Head rather depressed, as long as broad; snout rounded, once and a half or once and two thirds as long as the diameter of the eye; canthus rostralis very indistinct; loreal region not concave; interorbital space generally broader than the upper eyelid; tympanum very distinct, about half the diameter of the eye. Fingers free; no projecting rudiment of pollex; toes three-fourths webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the eye, or between the latter and the tip of the snout. Upper surfaces smooth, or covered with small tubercles; lower surfaces granulate; a strong fold across the chest. Coloration very variable. Brownish above, immaculate, or dotted, variegated, or longitudinally striped with darker; frequently a light streak along each side of the back, beginning from the eye, or two curved dark markings on the front of the back, forming an **X** the branches of which are separated; the sides of the thighs may be immaculate, or black- and white-marbled. The uniform thighs correspond generally with the streaks on the back (*Hyla rubra*), and the marbled thighs with the **X**-mark (*H. x-signata*), but this coincidence is not constant. Beneath whitish, immaculate. Male with an external subgular vocal vesicle. From snout to vent 46 millim.

S. America.

a, b, c–d. ♂, ♀, & hgr.	Surinam.	
e–f. ♀.	Demerara.	Capt. Friend [P.].
g–h. ♂ ♀.	Demerara.	Col. Sabine [P.].
i. Many spec.: ♀, hgr., & yg.	Bahia.	
k, l, m, n. ♂, ♀, & hgr.	Para.	
o–p. ♀.	Para.	R. Graham, Esq. [P.].
q. ♀.	Santarem.	H. W. Bates, Esq. [C.].
r–s. ♀.	Santarem.	H. A. Wickham, Esq. [C.].
t–v. ♀.	Sarayacu, Ecuador	Mr. Buckley [C.].
w, x. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].
y. ♂.	Soriano, Uruguay.	— Havers, Esq. [P.].
z–a. ♂ ♀.	Brazil.	H. W. Bates, Esq. [C.].
β. ♀.	S. America.	Mus. Guilding.
γ. Hgr.	S. America.	C. Darwin, Esq. [P.].

111. Hyla funerea.

Scytopis funereus, *Cope, Proc. Ac. Philad.* 1874, p. 123.

Vomerine teeth in short fasciculi between the choanæ. Head oval; snout narrowed, as long as the diameter of the eye; tympanum half the diameter of the eye. Fingers free; no projecting rudiment of pollex; longest toe webbed to base of penultimate phalange. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches considerably beyond the tip of the snout. Back with a very few scattered elevations; areolations of belly fine. Dark brown or blackish, with a broad black cross band between the eyes and several across arm, femur, tibia, and tarsus; femora uniform behind; a few black spots on posterior part of the side; throat and breast black-punctated. From snout to vent 44 millim.

Moyobamba, Peru.

112. Hyla rubella.

Hyla rubella, *Günth. Cat.* p. 111.
Hyla rubella, *Gray, Zool. Misc.* p. 57; *Keferst. Götting. Nachr.* 1867, p. 357, *and Arch. f. Naturg.* 1868, p. 283, pl. 8. f. 29.

Tongue large, oval, entire and free behind. Vomerine teeth in two groups close together behind the level of the choanæ. Head small, as long as broad; snout rounded, as long as the diameter of the eye; canthus rostralis obtuse; loreal region nearly vertical; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum distinct, about half the diameter of the eye. Fingers and toes very variable in shape; in some specimens they are moderate, with rather small disks, in others short and stout and with very large dilations; but as some specimens exhibit an intermediate structure, it is impossible to attach a specific importance to this character, though, when the two extreme forms are placed side by side, the difference is a very striking one. Fingers free or with a slight rudiment of web; no distinct rudiment of pollex; toes two-thirds or three-fourths webbed; subarticular tubercles well developed; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the tympanum. Skin smooth above, granulate beneath; a strong fold across the chest. Greyish or reddish brown above, uniform or speckled with darker; a dark band on the side of the head and body; beneath whitish, immaculate. Male with a brown external subgular vocal sac; during the breeding-season the inner side of the first finger is covered with brown rugosities. From snout to vent 39 millim.

Australia.

a, b–c. ♀.	Port Essington.	Mr. Gould [C.]. (Types.)
d. ♀.	Nicol Bay.	M. Du Boulay [C.].
e–f, g. ♂.	N. Australia.	G. Krefft, Esq. [P.].
h–i. ♂.	Port Denison.	G. Krefft, Esq. [P.].
k–l. ♀.	Rockhampton.	Mus. Godeffroy.
m–p. ♀.	Peak Downs.	Mus. Godeffroy.
q. Hgr.	Abrolhos.	Dr. A. Günther [P.].

113. Hyla congenita.

Hyla (Litoria) congenita, *Peters & Doria, Ann. Mus. Civ. Gen.* xiii. 1878, p. 427, pl. 6. f. 4, 5.

Allied to *H. rubella*, but distinguished by a very distinct web between the fingers. Brown above, black-punctate, or with two irregular, more or less distinct, dark, longitudinal dorsal bands and a black lateral band. From snout to vent 36 millim.

New Guinea.

114. Hyla dentata.

Hyla dentata, *Keferst. Götting. Nachr.* 1868, p. 329, *and Arch. f. Naturg.* 1868, p. 130, pl. 8. f. 20 & 21.

Tongue subcircular, entire and free behind. Vomerine groups subcircular, behind the level of the choanæ, the teeth on each of them arranged in an arch the concavity of which is turned forwards. Head moderate, a little broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis distinct; loreal region slightly oblique; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers webbed at the base; no distinct rudiment of pollex; toes three-fourths webbed; disks of fingers quite as large as the tympanum, of toes smaller; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum, or not quite so far. Skin smooth, or slightly tuberculate above; belly and lower surface of thighs granulate; a strong fold across the chest. Brown or greyish olive above, minutely speckled with darker; a lighter zone on each side of the back; a dark streak extending along the canthus rostralis, through the eye, over the tympanum to beyond the shoulder; beneath whitish, immaculate. Male with a large brown, external subgular vocal sac. From snout to vent 48 millim.

Eastern Australia.

a–b. ♂ ♀.	Sydney.	G. Krefft, Esq. [P.].
c–e, f–g. Hgr. & yg.	Sydney.	Mus. Godeffroy.

115. Hyla ewingii.

Hyla ewingii, *Günth. Cat.* p. 111.

Hyla ewingii, *Dum. & Bibr.* p. 597; *Jacq. & Guichen. Rept. in Voy. au Pôle Sud par Dumont d'Urville*, p. 26, pl. 1. f. 3; *Steindachn. Novara, Amph.* p. 62.

—— calliscelis, *Peters, Mon. Berl. Ac.* 1874, p. 620.

Tongue heart-shaped, free behind. Vomerine teeth in two small transverse or slightly oblique series between the choanæ. Head moderate, a little broader than long; snout rounded, as long as the diameter of the eye; canthus rostralis distinct; loreal region not or but very slightly concave; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum distinct, half or three fifths the diameter of the eye. Fingers with a slight rudiment of web; no distinct rudiment of pollex; toes two-thirds webbed; disks smaller than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum or the eye. Upper surfaces smooth or with small scattered tubercles; lower surfaces granulate; a fold above the tympanum. Brownish or greyish above; a dark streak on canthus rostralis and temporal region; below this, a whitish streak runs from below the eye to the shoulder; a large, well defined dark spot commences between the eyes and covers the middle of the back; besides, the head and back are often speckled all over with blackish; lower surfaces whitish, immaculate. Male with an external subgular vocal sac; during the breeding-season the inner side of the first finger is covered with blackish rugosities. From snout to vent 42 millim.

Australia.

a. ♀.	Tasmania.	Zoological Society [P.]. (One of the types.)
b–d, e. ♀ & hgr.	Tasmania.	R. Gunn, Esq. [P.].
f–i, k. ♂ ♀.	Hobart Town.	J. B. Jukes, Esq. [P.]
l. ♀.	Melbourne.	
m, n–p. ♂ ♀.	Australia.	

VAR. A (*H. calliscelis*, Peters). Hinder side of thighs with large purplish-black spots on yellowish ground; a purplish-black spot in the groin.

q–r. ♀.	King George's Sound.	G. Krefft, Esq. [P.].

116. Hyla krefftii.

Hyla krefftii, *Günth. Ann. & Mag. N. H.* (3) xi. 1863, p. 28, pl. 4. f. C, *and Proc. Zool. Soc.* 1863, p. 250, pl. 30. f. D; *Keferst. Götting. Nachr.* 1867, p. 357, *and Arch. f. Naturg.* 1868, p. 280.

Very closely allied to *H. ewingii*, but differing in the more distinct web between the fingers, and the more extensive web between the toes, it reaching the disks of the third and fifth. From snout to vent 47 millim.

Australia.

a. ♀.	Sydney.	G. Krefft, Esq. [C.]. (Type.)
b. ♀.	Sydney.	Zool. Soc.
c. ♀.	Randwick.	G. Krefft, Esq.
d–e. Hgr.	Port Denison.	G. Krefft, Esq.
f, g. ♂ ♀.	New Holland.	
h. ♀.	? Tasmania.	Dr. Milligan [P.].

117. Hyla parvidens.

Hyla parvidens, *Peters, Mon. Berl. Ac.* 1874, p. 620.

Distinguished from *H. ewingii* in having a smaller tympanum, the diameter of which is one third that of the eye, and the vomerine teeth very slightly developed, hardly distinguishable. Yellowish above, immaculate, except a few small dark dots on the hind limbs; a black streak on canthus rostralis and temporal region. From snout to vent 33 millim.

Port Philip, Australia.

118. **Hyla adelaidensis.**

Hyla adelaidensis, *Günth. Cat.* p. 113.
Hyla adelaidensis, *Gray, in Grey's Journ. Exped. Austr.* p. 447, pl. 8. f. 2.
—— bioculata, *Gray, l. c.* f. 1.
—— schuetteri, *Keferst. Arch. f. Naturg.* 1868, p. 279, pl. 8. f. 27, 28.

Tongue suboval, slightly nicked and free behind. Vomerine teeth in two transverse or slightly oblique groups between the choanæ. Head a little longer than broad; snout subacuminate, rather prominent, the end sometimes regularly pointed; the distance between the eye and the nostril equals the diameter of the former; canthus rostralis angular, straight; loreal region nearly vertical; interorbital space a little broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Body elongate. Fingers with an indistinct rudiment of web; no distinct rudiment of pollex; toes three-fourths webbed; disks much smaller than the tympanum; subarticular tubercles moderate; a very distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper surfaces smooth, or with few small scattered tubercles; belly and lower surface of thighs granulate; a strong fold across the chest. Brown above, uniform, or spotted or marbled with darker; a dark streak from the nostril, through the eye, along each side of the body; below this, a white or pink streak extends from the eye to the middle of the side; hinder side of thighs dark brown, white-spotted, sometimes not coloured or with obsolete lighter spots. Male with an external subgular vocal sac. From snout to vent 47 millim.

Australia.

a. ♀.	W. Australia.	Mr. Gilbert. (Type.)
b–h. ♀ & hgr.	W. Australia.	(Types of *H. bioculata.*)
i–m. Hgr. & larvæ.	W. Australia.	G. T. Moore, Esq. [P.].
n–o. ♀.	W. Australia.	Hr. Dämel [C.].
p–r, s–t, u–v, w. ♂ ♀.	Port Essington.	Dr. Fleming [P.].
x. ♀.	King George's Sound.	G. Krefft, Esq. [P.].

119. **Hyla citropus.**

Hyla citropus, *Günth. Cat.* p. 115.
Dendrohyas citropa, (*Péron & Lesueur*) *Tschudi, Batr.* p. 75.
Hyla citropa, *Dum. & Bibr.* p. 600.
—— citropus, *Keferst, Arch. f. Naturg.* 1868, p. 281, pl. 7. f. 22 & 23.

Tongue subcircular, nicked and free behind. Vomerine teeth in two oblique groups behind the level of the choanæ. Head moderate, broader than long; snout rounded, slightly longer than the diameter of the orbit; canthus rostralis distinct; loreal region nearly vertical, slightly concave; interorbital space a little broader than the upper eyelid; tympanum distinct, about half the diameter of the eye. Fingers free; no distinct rudiment of pollex; toes half webbed; disks smaller than the tympanum; subarticular tubercles well developed; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth or minutely tubercular above, granulate beneath; a curved fold from the eye to the shoulder. Uniform purplish above; a blackish streak along the canthus rostralis; a blackish, above light-edged, streak along the side of the body; beneath whitish, immaculate. From snout to vent 58 millim.

Eastern Australia.

a–c, d–e. ♀ & yg.	N. S. Wales.	G. Krefft, Esq. [C.].
f. Hgr.	Sydney.	G. Krefft, Esq. [C.].
g. ♀.	Errumanga?	

120. **Hyla thesaurensis.**

Hyla thesaurensis, *Peters, Mon. Berl. Ac.* 1877, p. 421.

Tongue small, heart-shaped. Vomerine teeth in two small transverse groups between the choanæ. Snout rounded, as long as the eye; canthus rostralis rounded; loreal region concave; tympanum half the diameter of the eye. Fingers free; toes half webbed. Belly and lower surface of thighs granulate. Olive-brown above; a white vertebral line, beginning on the tip of the snout, another along each side of the back, beginning from the eye and passing above the tympanum; a streak between the eyes and another from the loreal region to below the tympanum, also white; belly and lower surface of thighs yellowish. From snout to vent 28 millim.

Solomon Islands.

121. **Hyla impura.**

Hyla impura, *Peters & Doria, Ann. Mus. Civ. Genov.* xiii. 1878, p. 426, pl. 7. f. 2.

Tongue cordiform. Vomerine teeth in two transverse groups between the choanæ. Snout a little longer than the diameter of the eye; canthus rostralis distinct; tympanum half the diameter of the eye. Fingers free; no distinct rudiment of pollex; toes somewhat more than half webbed; disks moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth above, granulate beneath; a very distinct fold across the chest. Olive-green above, lighter beneath; hinder side of thighs black, white-punctate. From snout to vent 42 millim.

New Guinea.

122. Hyla vagabunda.

Hyla vagabunda, *Peters & Doria, Ann. Mus. Civ. Genov.* xiii. 1878, p. 424, pl. 6. f. 3.

Tongue large, cordiform. Vomerine teeth in two transverse groups between the choanæ. Snout rounded, scarcely longer than the diameter of the eye; canthus rostralis rounded; tympanum half the diameter of the eye. Fingers free; no distinct rudiment of pollex; toes somewhat more than half webbed; disks moderate. Skin smooth above; belly and lower surface of thighs granulate; a very distinct fold across the chest. Blue above; a whitish line from the tip of the snout, through the eye, to the shoulder; whitish beneath. From snout to vent 37 millim.

New Guinea.

123. Hyla arfakiana.

Hyla arfakiana, *Peters & Doria, Ann. Mus. Civ. Genov.* xiii. 1878, p. 421, pl. 6. f. 2.

Tongue suboval, indistinctly nicked and free behind. Vomerine teeth in two oblique series between the choanæ. Head as long as broad; snout acuminate, longer than the diameter of the orbit; canthus rostralis angular, straight; loreal region not very oblique; interorbital space broader than the upper eyelid; tympanum very small, not quite one third the diameter of the eye. Fingers free; no distinct rudiment of pollex; toes two-thirds webbed; disks of fingers half the diameter of the eye, of toes smaller; subarticular tubercles small. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches a little beyond the tip of the snout. Skin smooth above; belly and lower surface of thighs granulate; heel with a short triangular dermal appendage. (Colour very variable.) Upper surfaces with a few dark spots and a large dark hourglass-shaped spot on the back, commencing between the eyes; loreal region dark; hinder side of thighs purplish brown; beneath brownish, mottled with greyish. From snout to vent 57 millim.

New Guinea.

a. ♀.	N. Guinea.

124. Hyla aurea.

Hyla aurea, *Günth. Cat.* p. 114.
Rana aurea, *Lesson, Voy. Coquille, Zool.* ii. p. 60, pl. 7. f. 2.
Ranoidea jacksoniensis, (*Bibr.*) *Tschudi, Batr.* p. 79.
Hyla jacksoniensis, *Dum. & Bibr.* p. 602: *Gray, in Grey's Journ. Exp. Austr.* pl. 8. f. 3 (without name).
Ranoidea resplendens, *Girard, Proc. Ac. Philad.* vi. 1853, p. 422, *and U.S. Expl. Exped., Herp.* p. 48, pl. 3. f. 7–12.
—— aurea, *Girard, U.S. Explor. Exped., Herp.* p. 48.
Litoria aurea, *Günth. Proc. Zool. Soc.* 1864, p. 49.
Hyla aurea, *Steindachn. Novara, Amph.* p. 61; *Keferst. Arch. f. Naturg.* 1868, p. 284, pl. 7. f. 18 & 19.
Chirodryas raniformis, *Keferst. Götting. Nachr.* 1867, p. 358.

Habit raniform. Tongue suboval, nicked and free behind. Vomerine teeth between the choanæ, in two slightly oblique series convergent posteriorly. Head as long as broad, or a little longer than broad, resembling in shape that of *Rana esculenta*; snout longer than the diameter of the eye; canthus rostralis moderately distinct; loreal region slightly concave; interorbital space narrower than the upper eyelid; tympanum very distinct, half or two thirds the diameter of the eye. Fingers free; no distinct rudiment of pollex; toes entirely webbed, or nearly so; disks small, about half the diameter of the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, sometimes not quite so far, sometimes a little beyond. Skin smooth or warty above, granulate beneath; a more or less indistinct glandular lateral fold. Bluish or olive above, spotted or marbled with blue or brown; a dark streak on the canthus rostralis; generally a whitish band on each side of the back; sometimes a light vertebral band; beneath whitish, immaculate. Male with two internal vocal sacs; during the breeding-season the inner side of the first finger furnished with brown rugosities. From snout to vent 79 millim.

Australia.

a–b, c–d, e–f, g. ♂, ♀, hgr., & yg.	Port Essington.	Dr. Fleming [P.].
h. ♀.	Melbourne.	G. Krefft, Esq. [P.].
i. ♀.	Melbourne.	A. E. Craven, Esq. [P.].
k. Hgr.	King George's Sound.	Haslar Hospital.
l. ♀.	King George's Sound.	G. Krefft, Esq. [P.].
m–n. Hgr. & yg.	Swan River.	Sir A. Smith [P.].
o, p, q. ♂ & hgr.	Swan River.	
r–s, t–w, x–α. ♂, ♀, hgr., & yg.	W. Australia.	
β, γ. ♀, skeleton.	Australia.	
δ. ♀.	Australia.	C. Darwin, Esq. [P.].
ε. Hgr.	Australia.	Mr. W. Buchanan.
ζ–η. ♀ & hgr.	Australia.	G. Krefft, Esq. [P.].
θ, ι–λ. ♀, hgr., & yg.	Tasmania.	R. Gunn, Esq. [P.].
μ–π. Yg.	Tasmania.	Capt. Ross's Exped.
ρ. Hgr.	China (???).	C. Bowring, Esq. [P.].

VAR. **cyclorhynchus.**

Litoria aurea, var., *Günth. Proc. Zool. Soc.* 1870, p. 402, pl. 30. f. 3.

Snout shorter, more rounded. Groin and sides of thighs black, with white spots: lower surfaces densely reticulated with black, these being, however, immaculate in the young specimen. Perhaps a species.

σ–χ. ♂, ♀, & yg.	W. Australia.	G. Krefft, Esq. [P.].

125. Hyla obtusirostris.

Litoria obtusirostris, *Meyer, Mon. Berl. Ac.* 1874, p. 139.

Vomerine teeth in two round groups behind the level of the choanæ. Head broad; snout obtuse; canthus rostralis very weak; loreal region slightly concave; tympanum half the diameter of the eye. Fingers free, toes entirely webbed; disks moderate. Tibio-tarsal articulation reaching beyond the tip of the snout. Upper surfaces finely warty. Bluish grey above, the warts yellowish. From snout to vent 37 millim.

Jobi, New Guinea.

126. Hyla lesueurii.

Hyla lesueurii, *Dum. & Bibr.* p. 595; *Keferst. Arch. f. Naturg.* 1868, p. 278, pl. 7. f. 24 & 25, & pl. 8. f. 26.
Litoria wilcoxii, *Günth. Proc. Zool. Soc.* 1864, p. 48.
? Litoria copei, *Steindachn. Novara, Amph.* p. 56, pl. 3. f. 14–17.
Litoria lesueurii, *Peters, Mon. Berl. Ac.* 1873, p. 611.

Habit slender. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two straight or slightly oblique series between the front part of the choanæ. Head as long as broad, resembling exactly that of *Rana agilis*; snout slightly prominent, acuminate, once and a half or once and two thirds as long as the diameter of the eye; canthus rostralis angular; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, half or two thirds the diameter of the eye. Fingers free, first and second equal; no distinct rudiment of pollex; toes two-thirds webbed; disks small; subarticular tubercles well developed; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or beyond. Skin smooth above, granulate on the belly and under the thighs; a curved fold from the eye over the tympanum. Olive or purplish above, uniform or with more or less distinct darker markings; a black streak from the tip of the snout, through the eye, to the side; groin black-marbled; hinder side of thighs black, white-spotted; beneath whitish, immaculate, or marbled with brown on the throat. Male with an internal subgular vocal sac; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 65 millim.

Australia.

a–b. Hgr.	Clarence River.	G. Krefft, Esq. [P.]. (Types of *Litoria wilcoxii.*)
c, d. ♂ ♀.	Clarence River.	G. Krefft, Esq. [P.].
e. ♀.	Sydney.	Mus. Godeffroy.
f. ♀.	Sydney.	
g. Hgr.	Fort Curtis.	G. Krefft, Esq. [P.].
h. ♀.	Errumanga?	

127. **Hyla nigrofrenata.** (Plate XXVI. fig. 2.)

Hyla nigrofrenata, *Günth. Ann. & Mag. N. H.* (3) xx. 1867, p. 56.

Tongue suboval, slightly nicked and free behind. Vomerine teeth in two transverse groups on a level with the front part of the choanæ; latter vertically elliptic. Habit slender. Head longer than broad; snout acuminate; the distance between the eye and the nostril equals the diameter of the former; canthus rostralis distinct; loreal region oblique, slightly concave; interorbital space a little broader than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers free, first extending slightly beyond second; no distinct rudiment of pollex; toes slender, two-thirds webbed; disks very small; subarticular tubercles very prominent; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches far beyond the tip of the snout. Skin smooth, granulate on the belly and under the thighs. Light olive above; a broad black band on each side of the head, through the eye, followed by a black spot; a blackish band across the back of the wrist; sides of hind limbs with a blackish line; hinder side of thighs marbled with blackish; beneath whitish, immaculate. From snout to vent 41 millim.

N. Australia.

a. ♀.	Cape York.	Hr. Dämel [C.].	Types.
b. ♀.	Cape York.		

128. **Hyla affinis.** (Plate XXVI. fig. 3.)

Litoria freycineti, *Günth. Cat.* p. 97.
Pelodytes affinis, *Gray, Zool. Misc.* p. 56.

Habit slender. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two oblique groups between the choanæ; latter vertically elliptic. Head longer than broad, resembling that of *Rana agilis*; snout acuminate, rather prominent, once and a half as long as the diameter of the eye; canthus rostralis distinct; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers slender, free, first a little longer than second; no distinct rudiment of pollex; toes slender, somewhat more than half webbed; disks very small; subarticular tubercles small, but very prominent; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the nostril or the tip of the snout. Skin smooth above; belly and lower surface of thighs granulate. Brown above; loreal and temporal regions blackish; hinder side of thighs black- and white-marbled; beneath whitish, immaculate; the male's throat brown. Male with an internal subgular vocal sac. From snout to vent 35 millim.

N. Australia.

a. ♂.	Port Essington.	(Type.)
b. ♀.	Rockhampton.	

129. **Hyla latopalmata.** (Plate XXVI. fig. 4.)

Litoria latopalmata, *Günth. Ann. & Mag. N. H.* (3) xx. 1867, p. 55.

Habit very slender. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two slightly oblique groups between the choanæ; latter vertically elliptic. Head longer than broad, resembling that of *Rana mascareniensis*; snout rather prominent, acuminate, twice as long as the diameter of the eye, or nearly so; canthus rostralis distinct, rather obtuse; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, nearly as large as the eye. Fingers slender, free, first a little longer than second; no distinct rudiment of pollex; toes slender, two-thirds webbed; disks very small; subarticular tubercles small but very prominent; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper surfaces smooth, or with a few indistinct warts on the back; belly and lower surface of thighs granulate. Brownish or olive above, with irregular dark spots; a dark streak along loreal and temporal regions; lips white-spotted; sides of thighs marbled with black; beneath whitish, immaculate. Male with an internal subgular vocal sac; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 37 millim.

Eastern Australia.

a–b. ♀.	Port Denison.	G. Krefft, Esq. [P.]. (Types.)
c. ♀.	Queensland.	
d–f. ♀ & hgr.	Brisbane.	G. Krefft, Esq. [C.].
g. ♂ ♀.	Richmond.	G. Krefft, Esq. [P.].
h. Many spec.: ♂, ♀, hgr., & yg.	——?	G. Krefft, Esq. [P.].

130. **Hyla freycineti.**

Litoria freycineti, *Dum. & Bibr.* p. 504, pl. 88. f. 2; *Tschudi, Batr.* p. 77; *Steindachn. Novara, Amph.* p. 55.
—— mystacina, *Keferst. Götting. Nachr.* 1867, p. 356.
Hyla freycineti, *Keferst. Arch. f. Naturg.* 1868, p. 276, pl. 6. f. 17.

Habit very slender. Tongue subcircular or suboval, nicked and free behind. Vomerine teeth in two transverse or slightly oblique series on a level with the front edge of the choanæ; latter vertically elliptic. Head much longer than broad, resembling that of *Rana fasciata*; snout prominent, pointed, twice as long as the diameter of the eye; canthus rostralis distinct; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds or three fourths the diameter of the eye. Fingers slender, free, first and second equal; no distinct rudiment of pollex; toes slender, half webbed; disks very small; subarticular tubercles well developed; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper surfaces with smooth warts; belly and lower surface of thighs granulate. Brownish or olive above, with large insuliform, more or less confluent dark spots; a blackish streak along loreal and temporal regions; lips and sides of thighs generally spotted with whitish; beneath whitish, immaculate; the male's throat brownish. Male with an internal subgular vocal sac; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 47 millim.

Eastern Australia.

a–c, d. ♂, ♀, & yg.	Sydney.	G. Krefft, Esq. [C.].
e, f, g. ♂ ♀.	Australia.	G. Krefft, Esq. [C.].

131. Hyla nasuta.

Litoria nasuta, *Günth. Cat.* p. 97.
Pelodytes nasutus, *Gray, Zool. Misc.* p. 56.
Litoria nasuta, *Steindachn. Novara, Amph.* p. 56.
Hyla nasuta, *Keferst. Arch. f. Naturg.* 1868, p. 277, pl. 6. f. 16.

Closely allied to *H. freycineti*, from which it may be distinguished at once by the presence of numerous longitudinal plaits on the back. Besides, the hind limb and, especially, the toes are still more elongate, and the web between the latter is somewhat more developed. Dark markings arranged in longitudinal bands on the back; a light streak along each side of the middle of the back; hinder side of thighs with one or two more or less defined black longitudinal streaks. Otherwise as in *H. freycineti.* From snout to vent 48 millim.

Northern and Eastern Australia.

a. ♀.	Port Essington.	(Type.)
b. ♂.	Port Essington.	Earl of Derby [P.].
c. ♀.	Brisbane.	G. Krefft, Esq. [C.].
d–e. ♀ & hgr.	Clarence River.	G. Krefft, Esq. [C.].
f. Hgr.	Australia.	Sir J. Richardson [P.].

132. Hyla dimolops.

Litoria punctata, *Günth. Cat.* p. 145.
Litoria punctata, *A. Dum. Ann. Sc. Nat.* 1853, p. 149.
Hyla dimolops, *Cope, Proc. Amer. Philos. Soc.* xi. 1869, p. 163.

Vomerine teeth in two oblique series. Head shorter than in *H. freycineti.* Toes nearly entirely webbed. Upper surfaces smooth; a narrow glandular lateral fold. Bluish grey above; back with scattered black dots; inner side of hind limbs black- and yellow-marbled. Otherwise as in *H. freycineti.*

Sydney.

5. NOTOTREMA.

Hyla, sp., *Dum. & Bibr.* viii. p. 598.
Gastrotheca, *Fitzing. Syst. Rept.* i. p. 30.
Notodelphys, *Weinland, Mon. Berl. Ac.* 1854, p. 372.
Nototrema, *Günth. Cat.* p. 115; *Cope, Nat. Hist. Rev.* 1865, p. 109, *and Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Opisthodelphys, *Günth. l. c.* p. 117; *Cope, Nat. Hist. Rev.* 1865, p. 109, *and Journ. Ac. Philad.* (2) vi. p. 85.

Pupil horizontal. Tongue subcircular, entire or slightly nicked, little free behind. Vomerine teeth. Tympanum distinct. Fingers webbed at the base; toes webbed, the tips dilated into regular disks. Outer metatarsals united. Female with a dorsal pouch. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra moderately dilated.

Tropical America.

Synopsis of the Species.

I. Derm of head free from cranial ossification.

Tibio-tarsal articulation not reaching beyond the eye; interorbital space not broader than the diameter of the orbit.	1. *marsupiatum*, p. 416.
Tibio-tarsal articulation not reaching beyond the eye; interorbital width greater than the diameter of the orbit.	2. *plumbeum*, p. 417.
Tibio-tarsal articulation reaching nearly the tip of the snout; skin of back with bony deposits	3. *testudineum*, p. 417.
Tibio-tarsal articulation reaching beyond the tip of the snout	4. *longipes*, p. 418.
II. Derm of head completely involved in the rugose cranial ossification . .	5. *oviferum*, p. 418.

1. Nototrema marsupiatum.

Nototrema marsupiatum, *Günth. Cat.* p. 116, pl. 10. f. B.
Hyla marsupiata, *Dum. & Bibr.* p. 598, pl. 98; *Guichen. in Casteln. Anim. nouv. ou rares de l'Amér. du Sud, Rept.* p. 86.
Nototrema marsupiatum, *Günth. Proc. Zool. Soc.* 1859, p. 417; *Espada, Viaj. Pacif., Vertebr.* pl. 4. f. 1.

Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two short straight series on a level with the hinder edge of the choanæ. Head moderate, broader than long; skull rugose in the adult, the derm of the head, however, remaining free; snout rounded, much longer than the diameter of the eye; loreal region not concave; canthus rostralis distinct; interorbital space broader than the upper eyelid, concave in full-grown specimens; tympanum distinct, half or two thirds the diameter of the eye. Fingers with a very slight rudiment of web; toes half webbed; disks nearly as large as the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or not quite so far. Skin smooth or warty above, granulate beneath. Above uniform bluish olive (in spirits), or greenish olive with bluish or dark-green, black-edged longitudinal spots, and with transverse bars on the limbs; beneath whitish, immaculate or brown-spotted. Male with an external subgular vocal sac. From snout to vent 72 millim.

Peru; Ecuador.

a–b, c–d, e, f, g, h. Many spec., ♂ ♀.	Andes of Ecuador.	Mr. Fraser [C.].
i–k, l. ♀.	W. Ecuador.	Mr. Fraser [C.].
m. Several spec., ♂ & hgr.	Guayaquil.	Mr. Fraser [C.].
n. ♀.	Quito.	
o. ♀.	Intac.	Mr. Buckley [C.].
p. Yg.	Paitanga.	Mr. Buckley [C.].

2. **Nototrema plumbeum.** (Plate XXVIII. fig. 1.)

Very closely allied to *N. marsupiatum*, from which it differs in the wider interorbital space (this being considerably wider than the diameter of the orbit), the larger disks of the fingers (these being a little larger than the tympanum), and coloration. Above dark lead-colour, minutely speckled all over with lighter; beneath uniform lead-colour. From snout to vent 66 millim.

Ecuador.

a. ♀.	Intac.	Mr. Buckley [C.].

3. **Nototrema testudineum.**

Nototrema testudineum, *Espada, Jorn. Sc. Lisb.* ix. 1870, p. 62, *and Viaj. Pacif., Vertebr.* pl. 4. f. 2.

Vomerine teeth in two slightly oblique series between the choanæ. Interorbital space deeply concave; tympanum not very distinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Derm of back studded with stellate bony deposits. Uniform lead-colour above, lighter beneath. Otherwise as in *N. marsupiatum*. From snout to vent 82 millim.

Ecuador; Peru.

a.	Pozuzu, Peru.	W. Davis [C.].

In this species, as in *N. oviferum*, the young undergo their complete metamorphosis in the maternal pouch; whilst in *N. marsupiatum* they leave the pouch in the tadpole state.

4. Nototrema longipes. (Plate XXVII.)

Tongue subcircular, nicked and free behind. Vomerine teeth in two straight series between the choanæ. Head moderate, broader than long; fronto-parietals strongly ossified, rugose, pitted or vermiculated, not confluent with the derm of the head; snout elevated, the tip obliquely truncate from nostril to lip, much longer than the diameter of the eye; loreal region slightly concave; canthus rostralis angular; interorbital space not concave, broader than the upper eyelid; tympanum moderately distinct, about half the diameter of the eye. Three outer fingers one-fourth webbed; toes nearly entirely webbed; disks as large as the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth above, granulate beneath; heel with a very short dermal spur; a small conical tubercle near the edge of the upper eyelid. Yellowish above; female minutely speckled with brown on the back; male with a broad brown cross band between the eyes, a line from the eye to the vertical of the axilla, and five spots of the same colour on the back—these markings formed by the aggregation of dark-brown dots; a brown, white-edged line along the outer edge of the tarsus and fifth toe, and another transversely above the vent. From snout to vent 82 millim.

Ecuador.

a. ♀.	Canelos.	Mr. Buckley [C.].
b. ♂.	Sarayacu.	Mr. Buckley [C.].

5. Nototrema oviferum.

Opisthodelphys ovifera, *Günth. Cat.* p. 117.
Notodelphys ovifera, *Weinland, Mon. Berl. Ac.* 1854, p. 372, *and Arch. f. Anat. Physiol.* 1854, p. 449, pls. 17–19.

Tongue subcircular, entire and slightly free behind. Vomerine teeth in two short straight series on a level with the hinder edge of the choanæ. Head moderate, a little broader than long, forming a rugose casque, the derm being involved in the cranial ossification; posterior border of casque, supratympanic, supraorbital, and canthal ridges with erect spines; snout rounded, scarcely longer than the diameter of the orbit; loreal region and crown concave; interorbital space broader than the upper eyelid; tympanum very distinct, nearly as large as the eye. Fingers webbed at the base; toes short, half webbed; disks well developed, but much smaller than the tympanum; subarticular tubercles moderate; a slight fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granulate beneath. Brown above; sides with large dark spots; others on the foot, tarsus, inner side of thighs, and upper surface of thighs, the latter forming cross bars; beneath brownish. Male without vocal sac. From snout to vent 60 millim.

Venezuela; Central America.

a. ♂. Cordova. M. Sallé [C.].

6. HYLELLA*.

Hylella, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 199; *Cope, Nat. Hist. Rev.* 1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Exerodonta, *Brocchi, Bull. Soc. Philom.* (7) iii. p. 19.
Hylomantis, *Peters, Mon. Berl. Ac.* 1880, p. 223.

Pupil horizontal. Tongue circular or suboval, slightly nicked and free behind. Vomerine teeth none. Tympanum distinct or indistinct. Fingers webbed at the base; toes extensively webbed, the tips dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra moderately dilated.

Tropical America; Australia.

Synopsis of the Species.

I. Tympanum indistinct, very small.	
Tongue oval; loreal region vertical; fingers one-third webbed	1. *tenera*, p. 419.
Tongue round; fingers one-third webbed; tympanum surmounted by a fold	2. *carnea*, p. 420.
Tongue round; loreal region oblique; fingers not one-third webbed	3. *buckleyi*, p. 420.
II. Tympanum perfectly distinct.	
Tympanum one fourth the diameter of the eye; disks of fingers of the same size as the tympanum; skin smooth above.	4. *sumichrasti*, p. 420.
Tympanum half the diameter of the eye; disks of fingers smaller than the tympanum	5. *bicolor*, p. 421.
Tympanum one fourth the diameter of the eye; skin warty above	6. *nigropunctata*, p. 421.

1. Hylella tenera.

Hylella tenera, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 200.

Tongue oval, slightly nicked. Head short and broad; canthus rostralis distinct; loreal region vertical; tympanum indistinct; eustachian tubes minute. Fingers one-third webbed; toes nearly entirely webbed; disks moderate; subarticular tubercles scarcely distinct. Reddish-grey above, with three dark Λ-shaped markings, the anterior one between the eyes and less distinct; legs with blackish cross bands.

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* *Hyperolius pygmæus*, Meyer, Mon. Berl. Ac. 1874, p. 132.—Jobi, New Guinea.

Brazil.

2. Hylella carnea.

Hylella carnea, *Cope, Proc. Ac. Philad.* 1868, p. 111.

Tongue round. Head broad and rounded; end of snout vertical; canthus rostralis moderately distinct; eyes large and prominent; tympanum indistinct and small. Fingers one-third webbed; disks of moderate size. Limbs slender. Skin smooth above; tympanum surmounted by a fold. The exterior coloration does not appear on the femur, and only as a faint line on humerus; the pigment is light rose-yellow; three narrow bands across tibia, two across forearm; a broad blood-red band between the eyes, each extremity sending a blood-red band on each side the back to the vent, with a connecting spot of the same on the coccyx; a deep red band from scapular region to end of snout; beneath uniform whitish.

Upper Amazon.

3. Hylella buckleyi. (Plate XXV. fig. 5.)

Tongue circular, slightly nicked. Head broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis very indistinct; loreal region high, oblique; interorbital space broader than the upper eyelid; tympanum extremely small, scarcely distinct. Fingers webbed at the base, first and second equal; toes two-thirds webbed; disks well developed, those of the fingers half the diameter of the eye; subarticular tubercles little developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth, belly and lower surface of thighs granulate. Head and back uniform purplish blue; upper lip white-margined; forearm, tibia, and a narrow, very indistinct line along the femur and tarsus blue; in one specimen the tibia and femur are dotted with white, the remaining parts not coloured. Male with an external subgular vocal sac. From snout to vent 29 millim.

E. Ecuador.

a. ♂.	Intac.	Mr. Buckley [C.].
b. ♀.	Paitanga.	Mr. Buckley [C.].

4. Hylella sumichrasti.

Exerodonta sumichrasti, *Brocchi, Bull. Soc. Philom.* (7) iii. p. 20.

Tongue subcircular, slightly nicked. Head as broad as long;

loreal region oblique; tympanum very small, about one fourth the diameter of the eye. Fingers webbed at the base; toes two-thirds webbed; disks moderate, those of the fingers equalling the tympanum in diameter. Skin smooth, belly and lower surface of thighs granulate; a fold from axilla to groin. Light violet-grey above, light yellow beneath.

Tehuantepec.

5. Hylella bicolor.

Hyperolius? bicolor, *Günth. Cat.* p. 89.
Eucnemis bicolor, *Gray, Zool. Misc.* p. 5.
Hylomantis fallax, *Peters, Mon. Berl. Ac.* 1880, p. 224, pl. 1. f. 4.

Tongue suboval, slightly nicked. Head as broad as long; snout subtriangular, rather prominent, as long as the diameter of the orbit; canthus rostralis distinct; loreal region vertical; interorbital space broader than the upper eyelid; tympanum distinct, about half the diameter of the eye. Fingers webbed at the base, first shorter than second; toes nearly entirely webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or not quite so far. Skin smooth, belly and lower surface of thighs granulate; a strong fold across the chest. Bluish above, immaculate or dotted with blackish; a blackish streak on canthus rostralis and temporal region; a white band from below the eye to the shoulder, sometimes continued along the side of the body; beneath whitish, immaculate. Male with an external subgular vocal sac.

Australia.

a. ♀.	Port Essington.	(Type.)
b. ♀.	Cape York.	Hr. Dämel [C.].
c–d. ♂ ♀.	Port Denison.	G. Krefft, Esq. [C.].
e. ♀.	Blue Mountains.	G. Krefft, Esq. [C.].
f. ♀.	Brisbane.	G. Krefft, Esq. [C.].
g–h. ♂.	Peak Downs.	Mus. Godeffroy.

6. Hylella nigropunctata.

Hyperolius nigropunctatus, *Meyer, Mon. Berl. Ac.* 1874, p. 139.

Allied to *H. bicolor.* Head short; snout very obtuse; loreal region high, slightly convex; tympanum one fourth the diameter of the eye. Tibio-tarsal articulation reaching beyond the tip of the snout. Skin warty. Blue above, dotted with black; hind limbs with black cross bars; humerus white; breast white, belly and lower surface of thighs yellowish.

Jobi, New Guinea.

7. NYCTIMANTIS.

Pupil erect. Tongue subcircular, scarcely free behind, entire.

Vomerine teeth. Tympanum distinct. Fingers free; toes webbed, the tips dilated into large disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra moderately dilated.

Ecuador.

The erect pupil distinguishes this genus from *Hyla*, and the adherence of the tongue in nearly its whole extent from *Agalychnis.*

1. Nyctimantis rugiceps. (Plate XXVIII. fig. 2.)

Vomerine teeth in two strong series on a level with the hinder edge of the large choanæ, forming a very open chevron, the point of which is turned forwards. Head large, rough, the derm being involved in the cranial ossification; snout rounded, twice as long as the diameter of the eye; loreal region very oblique, scarcely concave; canthus rostralis distinct; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers free, toes two-thirds webbed; disks smaller than the tympanum; subarticular tubercles not much developed. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granulate beneath. Light olive-grey or brownish above, dark chestnut-brown on the sides and beneath, the two colours sharply defined; back and upper surface of tibiæ generally rather indistinctly dotted with brown; generally one or two chestnut-brown spots on the back; upper lip white-margined; a broad whitish streak on each side of the body, beginning a short distance from the arm and ending a short distance from the thigh; this streak may be broken up into spots. Male with an internal subgular vocal sac. From snout to vent 70 millim.

Ecuador.

a. ♂.	Ecuador.	Mr. Buckley [C.].
b–d. ♂ ♀.	Canelos.	Mr. Buckley [C.].

8. AGALYCHNIS.

Agalychnis, *Cope, Proc. Ac. Philad.* 1865, p. 194, *and Nat. Hist. Rev.* 1865, p. 110.

Agalychnis, part., *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.

Pupil erect. Tongue oval, extensively free behind, slightly nicked. Vomerine teeth. Tympanum distinct. Fingers and toes webbed, the tips dilated into large disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra strongly dilated.

C. America.

1. Agalychnis moreletii.

Hyla moreletii, *A. Dum. Ann. Sc. Nat.* (3) xix. 1853, p. 169;

Keferst. Götting. Nachr. 1867, p. 356, *and Arch. f. Naturg.* 1868, p. 297; *Brocchi, Bull. Soc. Philom.* (7) i. p. 122, *and Miss. Sc. Mex., Batr.* pl. 1. f. 1.
Hyla holochlora, *Salvin, Proc. Zool. Soc.* 1862, p. 460, pl. 32. f. 2.
Agalychnis holochlora, *Cope, Nat. Hist. Rev.* 1865, p. 110.
—— moreletii, *Cope, l. c.*

Tongue oval, nicked behind. Vomerine teeth in two short horizontal, nearly straight series on a level with the front edge of the choanæ. Head depressed; snout rounded; canthus rostralis distinct; interorbital space slightly concave; tympanum about two thirds the width of the eye. Limbs slender; the hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout; arm much thinner than forearm; fingers at least half webbed, sometimes nearly to the disks; toes two-thirds or three-fourths webbed; disks of fingers and toes large, larger than the tympanum; subarticular tubercles very prominent; a more or less distinct narrow fold along the inner side of the tarsus. Skin smooth, granulate on the belly, under the thighs, and above the vent. Blue-green or violet above, uniform; sides and lower surfaces yellowish. Male with a subgular vocal sac.

C. America.

a. ♀.	Coban.	O. Salvin, Esq. [P.]. (Type of *Hyla holochlora.*)
b, c. ♂ ♀.	Guatemala.	O. Salvin, Esq. [P.].
d, e, f, g. ♂, ♀, & hgr.	Cartago, Costa Rica.	
h. ♀.	Neighbourhood of Nazu, Costa Rica.	Messrs. Salvin & Godman [P.].
i–k. ♂ ♀.	Costa Rica.	

2. Agalychnis callidryas.

Hyla callidryas, *Cope, Proc. Ac. Philad.* 1862, p. 359.
Agalychnis callidryas, *Cope, Nat. Hist. Rev.* 1865, p. 110.

Tongue elongate, elliptic, openly emarginate. Vomerine teeth in two oblique series, convergent posteriorly, anteriorly opposite anterior border of choanæ. Head elongate, maxillary outlines convergent, nearly straight; loreal region subvertical; canthus rostralis straight, rounded; tympanum nearly as large as the eye, obliquely elliptic. Fingers one-fourth, toes half webbed; disks very large. Heel reaching the end of the snout when extended. Skin above smooth. Blue-purple above, greenish on the scapular region: humerus, femur (except a narrow blue stripe), and under surfaces uniform saffron; numerous oblique bands of a lighter yellow on the sides.

Panama.

9. PHYLLOMEDUSA.

Phyllomedusa, *Wagl. Syst. Amph.* p. 201; *Tschudi, Batr.* p. 70; *Dum. & Bibr.* viii. p. 627; *Günth. Cat.* p. 120; *Cope, Nat. Hist. Rev.* 1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Pithecopus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Hylomantis, *Peters, Mon. Berl. Ac.* 1872, p. 772.
Agalychnis, sp., *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.

Pupil erect. Tongue oval, extensively free behind, entire or slightly nicked. Vomerine teeth present or absent. Fingers and toes free or shortly webbed, first opposite to the others, the tips dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra strongly dilated.

Tropical America.

Synopsis of the Species.

I. First toe a little shorter than second; parotoids none, or indistinct.

Fingers one-third webbed, toes nearly half-webbed	1. *buckleyi*, p. 425.
Fingers free, toes slightly webbed at the base; upper surfaces smooth ..	2. *lemur*, p. 425.
Fingers free, toes with a rudiment of web; upper surfaces tubercular ..	3. *aspera*, p. 425.
Fingers webbed at the base; toes one-third webbed; upper surfaces smooth.	4. *dacnicolor*, p. 426.

II. First and second toes equal.

Parotoids indistinct; heel with two dermal processes	5. *palliata*, p. 426.
Parotoids large, distinct; upper surfaces studded with bony deposits ..	6. *bicolor*, p. 427.

III. First toe longer than second.

Parotoids distinct, short; upper surfaces studded with bony deposits ..	7. *vaillantii*, p. 427.
Parotoids not prominent, extending from orbit to sacrum	8. *tarsius*, p. 428.
Parotoids very prominent, at least as long as the head	9. *burmeisteri*, p. 428.
Parotoids very prominent, much shorter than the head..................	10. *sauvagii*, p. 429.
Parotoids none; tympanum half the diameter of the eye	11. *cœlestis*, p. 429.
Parotoids indistinct; tympanum one third the diameter of the eye; heel with two dermal processes	12. *tomopterna*, p. 430.

Parotoids scarcely distinct; tympanum not half the diameter of the eye; sides and limbs with dark vertical bars........................ 13. *hypochondrialis*, p. 430.

1. **Phyllomedusa buckleyi.** (Plate XXIX. fig. 1.)

Tongue small, entire. Vomerine teeth none. Snout a little longer than the diameter of the eye, rounded; loreal region slightly oblique; interorbital space much broader than the upper eyelid; tympanum hidden. Fingers one-third webbed, toes nearly half webbed; first finger shorter than second, fourth slightly shorter than third; first toe a little shorter than second; disks of fingers and toes moderate, about one third the diameter of the eye; subarticular tubercles moderately prominent; inner metatarsal tubercle scarcely prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches a little beyond the tip of the snout. Skin smooth, granulate on the belly; parotoids none. Lilac above, minutely dotted with lighter; humerus, femur, hand, and foot (except outer toe) not coloured; beneath whitish, immaculate. From snout to vent 32 millim.

Ecuador.

a. Hgr.	Sarayacu.	Mr. Buckley [C.].

2. **Phyllomedusa lemur.**

Tongue very slightly emarginate posteriorly. Vomerine teeth none. Snout slightly longer than the diameter of the eye, narrowed, truncate at the end; loreal region nearly vertical; eyes very prominent, obliquely directed forwards; interorbital space broader than the upper eyelid; tympanum not quite one third the diameter of the eye. Fingers free, toes slightly webbed at the base; first finger shorter than second; first toe slightly shorter than second; disks of fingers and toes a little larger than the tympanum; subarticular tubercles moderately prominent; inner metatarsal tubercle very indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Skin smooth, slightly granulate on the belly; parotoids none. Light lilac above, scantily speckled with purplish red; fingers, toes, arms, thighs (except a band along the upperside), and lower surfaces not coloured; throat whitish lilac. From snout to vent 43 millims.

Costa Rica.

a. ♀.	Costa Rica.

3. **Phyllomedusa aspera.**

Hylomantis aspera, *Peters, Mon. Berl. Ac.* 1872, p. 772, pl. 1. f. 2.

Tongue slightly emarginate behind. Vomerine teeth in two small oblique groups between the choanæ. Head depressed; snout short;

loreal region oblique; tympanum one third the diameter of the eye. An indistinct web between the third and fourth fingers; first finger shorter than second, fourth a little shorter than third; toes with a rudiment of web, first a little shorter than second; disks of fingers and toes as large as the tympanum; subarticular tubercles well developed. Upper surfaces tubercular; parotoids none. Violet or greyish violet above, with or without rust-coloured or whitish dark-edged spots; sides yellowish; upper surface of forearm, femur, tibia, tarsus, and fifth toe violet; the remainder and lower surfaces yellowish.

Bahia.

4. Phyllomedusa dacnicolor.

Phyllomedusa dacnicolor, *Cope, Proc. Ac. Philad.* 1864, p. 181.
Agalychnis dacnicolor, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.

Tongue very slightly emarginate posteriorly. Vomerine teeth in two short, straight, transverse rows on a level with the anterior margin of the choanæ. Snout longer than the diameter of the eye, obliquely truncated from behind forwards; loreal region oblique; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers webbed at the base, toes one-third webbed; first finger shorter than second; first toe a little shorter than second; disks of fingers and toes much smaller than the tympanum; subarticular tubercles very prominent; a prominent inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tympanum. Skin smooth, granulate on the belly and under the thighs; parotoids indistinct. Upper surfaces uniform violet; sides and lower surfaces whitish, immaculate. Size of *Hyla arborea.*

Mexico.

a. ♀.	San Blas.	Mr. Forrer [C.].

5. Phyllomedusa palliata.

Phyllomedusa palliata, *Peters, Mon. Berl. Ac.* 1872, p. 773.

Tongue indistinctly emarginate. Vomerine teeth in two oblique groups on a level with the front edge of the choanæ. Snout longer than the diameter of the eye, truncate; loreal region nearly vertical; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers free, first shorter than second, fourth considerably shorter than third; toes with a distinct rudiment of web, first and second equal; disks of fingers nearly as large as the tympanum, of toes rather smaller; inner metatarsal tubercle not prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin smooth, granulate on the belly and under the thighs; parotoids indistinct; heel with two dermal processes, one projecting inwards and one outwards. Blue-green above; concealed portions of limbs and sides of body, also hands and feet, white, with vertical purplish-brown bands; a narrow blue band along the thigh; lower surfaces immaculate. Male with a subgular vocal sac. From snout to vent 49 millim.

Upper Amazon.

a. ♂.	Pebas.	H. W. Bates, Esq. [C.].

6. Phyllomedusa bicolor.

Phyllomedusa bicolor, part., *Günth. Cat.* p. 120.
Rana bicolor, *Boddaert, Monogr. de Rana bicol.* f. 1–5, *and Schrift. der Berl. Naturf.* ii. p. 459; *Shaw, Nat. Misc.* x. p. 367, *and Zool.* iii. p. 126.
Calamita bicolor, *Schneid. Hist. Amph.* p. 156; *Merr. Tent.* p. 170.
Hyla bicolor, *Latr. Rept.* ii. p. 174; *Daud. Rain.* p. 22, pls. 5 & 6, *and Rept.* viii. p. 40; *Spix, Spec. Nov. Test. Ran.* p. 42, pl. 13; *Gravenh. Delic.* p. 26; *Cuv. R. A.*; *Guérin, Iconogr. Rept.* pl. 26. f. 3.
Phyllomedusa bicolor, *Wagl. Syst. Amph.* p. 201.
—— bicolor, part., *Tschudi, Batr.* p. 70; *Dum. & Bibr.* p. 629, pl. 90. f. 2.
—— scleroderma, *Cope, Proc. Ac. Philad.* 1868, p. 112.

Tongue entire. Vomerine teeth in two oblique groups between the choanæ. Snout longer than the diameter of the eye, truncate; loreal region slightly oblique; interorbital space much broader than the upper eyelid; tympanum one half or two thirds the diameter of the eye. Fingers free, first shorter than second, fourth a little shorter than third; toes free, first and second equal; disks of fingers as large as the tympanum, of toes rather smaller; inner metatarsal tubercle not prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the tympanum. Upper surfaces studded with bony deposits; parotoids distinct, large; belly and lower surface of thighs granulate. Blue-green above; lower surfaces purplish white; small, white, purple-edged spots along the sides of the body and limbs; a narrow, white, purple-edged line along the outer side of forearm and tarsus; fingers purplish, the tips blue. Male with a subgular vocal sac. Size very large.

Guianas; Brazil.

a–b. ♀.	Demerara Falls.	
c. ♂.	Brazil.	Sir A. Smith [P.].
d. ♂.	—— ?	

7. Phyllomedusa vaillantii. (Plate XXIX. fig. 2.)

Tongue entire. Vomerine teeth in two small oblique groups between the choanæ. Snout a little longer than the diameter of the eye, obliquely truncated from behind forwards; loreal region oblique, very concave; interorbital space a little broader than the upper eyelid; tympanum half the diameter of the eye. Fingers free, first shorter than second, fourth a little shorter than third; toes free, first considerably longer than second; disks of fingers and toes much smaller than the tympanum; metatarsal tubercle indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the posterior corner of the eye. Upper surfaces studded with bony deposits; parotoids distinct, short, not extending beyond the vertical of the angle of the jaws; chest, belly, and inferior surface of thighs granulate. Blue-green above; sides of limbs and body purple, minutely spotted with whitish; a narrow, white, black-edged line along the outer side of forearm and tarsus; fingers light greenish; lower surfaces brownish white, with a few white spots on the throat and chest. Male with a subgular vocal sac. From snout to vent 60 millim.

Brazil. Named in honour of Professor Léon Vaillant.

a. ♂.	Santarem.	H. A. Wickham, Esq. [P.].

8. **Phyllomedusa tarsius.**

Pithecopus tarsius, *Cope, Proc. Ac. Philad.* 1868, p. 113.

Tongue openly emarginate behind. Vomerine teeth in two transverse groups on a level with the anterior edge of the choanæ. Snout longer than the diameter of the eye; upper lip somewhat projecting; loreal region slightly oblique; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers and toes free; first toe much longer than second; digital dilatations of hand largest, a little larger than the tympanum. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin minutely granular above, with a few flat glands on the back; beneath granulate, except under the arms, legs, and tarsi, the granules very large and flat on the pectoral region; parotoid stratum of crypts distinct, extending from orbit to sacrum. Blue-green above, purplish on gular and thoracic regions; femur green, except below; two external digits of the same colour; sides with small whitish spots; a few whitish spots on lower surfaces. Size large.

Upper Amazon.

a–b. ♀ & hgr.	Pebas.	H. W. Bates, Esq. [C.].

9. **Phyllomedusa burmeisteri.**

Phyllomedusa bicolor, part., *Günth. Cat.* p. 120.
Phyllomedusa bicolor, *Burmeister, Erläuter. zur Fauna Brasil.* p. 111, pl. 32; *Cope, Proc. Ac. Philad.* 1868, p. 112.

Tongue entire. Vomerine teeth in two oblique groups between the choanæ. Snout longer than the diameter of the eye, obliquely truncated from behind forwards; loreal regions oblique; interorbital space broader than the upper eyelid; tympanum about half the diameter of the eye. Fingers free, first shorter than second, fourth nearly as long as third; toes free, first longer than second; disks of fingers and toes much smaller than the tympanum; inner metatarsal tubercle not prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum or the eye. Upper surfaces smooth or minutely granulate; parotoids very distinct, large; belly and lower surface of thighs granulate. Blue-green above; sides of body and limbs generally with large white, purple-edged spots; a narrow white purple-edged line along the outer side of forearm and tarsus; fingers purplish brown, the tips white; purplish brown beneath, with or without white spots. Male with a subgular vocal sac.

S. America.

a. ♀.	Rio Janeiro.	Mrs. Fry [P.].
b–d. ♂ ♀.	Brazil.	Dr. Gardiner [P.].
e, f–g. ♂, ♀, & yg.	Brazil.	
h. Yg.	Brazil.	Lord Stuart [P.].
i. ♀.	Oran Salta, Buenos Ayres.	E. W. White, Esq. [C.].
k. ♀.	Brazil.	H. W. Bates, Esq. [C.].
l–m. Hgr.	Brazil.	

10. Phyllomedusa sauvagii. (Plate XXIX. fig. 3.)

Well distinguished from the preceding by the coloration and short parotoids. These are very prominent, and commence upon the upper eyelids, a great part of which is covered by them; the length of the parotoid equals about the distance from its anterior border to the tip of the snout. Blue-green above and beneath, except on the granulate regions; a white streak round the lower lip, extending along each side of the body to the level of the nasal region; a few large white spots on the thoracic region and on the sides of the belly; a large white spot on the heel; a light line along the outer edge of the tarsus and outer toe. From snout to vent 75 millim.

Buenos Ayres. Named in honour of Dr. H. E. Sauvage, Paris Museum.

a, b. ♂ ♀.	Oran Salta.	E. W. White, Esq. [C.].

11. Phyllomedusa cœlestis.

Pithecopus cœlestis, *Cope, Proc. Ac. Philad.* 1874, p. 121.

Differs from *P. burmeisteri* in the absence of any trace of a parotoid gland and the narrower interorbital space, the width of which equals that of the upper eyelid. Blue-green above; sides with irregular white spots; beneath brownish, with a few white spots.

Peru.

a–b. ♂ ♀.	Moyobamba.	A. H. Roff, Esq. [C.].

12. Phyllomedusa tomopterna.

Pithecopus tomopternus, *Cope, Proc. Ac. Philad.* 1868, p. 112.

Vomerine teeth in two small fascicles opposite the anterior part of the choanæ. Form elongate. Snout not quite vertical in profile; loreal region elevated, plane; tympanum one third the diameter of the eye. Fingers and toes free; first toe longer than second. The hind limb being carried forwards along the body, the tibiotarsal articulation marks the front of the orbit. Parotoids indistinct; a dermal fold on lower arm, strong on elbow; a weak one on tarsus, terminating above in two heel processes, one projecting inwards and one outwards. Above green, below with hands and feet yellow; outer fingers and toes bound with purple, like the concealed surfaces; no brown margin inside lower lip. Size small.

Upper Amazon.

13. Phyllomedusa hypochondrialis.

Phyllomedusa bicolor, part., *Günth. Cat.* p. 120.
Hyla hypochondrialis, *Daud. Rain.* p. 29, pl. 10. f. 1, *and Rept.* viii. p. 60; *Gravenh. Delic.* p. 28.
Calamita hypochondrialis, *Merr. Tent.* p. 170.
Phyllomedusa bicolor, part., *Dum. & Bibr.* p. 629.
—— hypochondrialis, *Cope, Proc. Ac. Philad.* 1862, p. 355; *Peters, Mon. Berl. Ac.* 1871, p. 404.
Pithecopus hypochondrialis, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86, *and Proc. Ac. Philad.* 1868, p. 112.
Phyllomedusa azurea, *Cope, Proc. Ac. Philad.* 1862, p. 355.
Pithecopus azureus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86, *and Proc. Ac. Philad.* 1868, p. 112.

Tongue entire. Vomerine teeth none. Snout as long as the diameter of the eye, truncate; loreal region nearly vertical; interorbital space a little broader than the upper eyelid; tympanum not half the diameter of the eye. Fingers free, first shorter than second, fourth nearly as long as third; first toe longer than second; disks of fingers and toes rather small; inner metatarsal not prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches generally the hinder edge of the eye. Skin smooth above, granulate beneath; parotoids scarcely distinct. Light purplish or blue above; upper lip white-edged; upper surface of arms colourless; a narrow bluish band along the thigh; concealed portions of limbs and sides of body with vertical purplish-brown bands; beneath whitish, immaculate. Male with a subgular vocal sac. Size of *Hyla arborea*.

S. America.

a–b. ♂ ♀.	Berbice.	
c–e. ♂ ♀.	British Guiana.	
f. ♀.	Dutch Guiana.	Sir A. Smith [P.].
g. Hgr.	Pernambuco.	W. A. Forbes, Esq. [P.].
h. ♀.	Santarem.	H. A. Wickham, Esq. [C.].

10. TRIPRION.

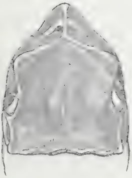
Pharyngodon, *Cope, Proc. Ac. Philad.* 1865, p. 193.
Triprion, *Cope, Proc. Ac. Philad.* 1866, p. 127, *and Journ. Ac. Philad.* (2) vi. 1866, p. 85.

Pupil erect. Tongue subcircular, scarcely free behind, entire. Vomerine teeth, and a series of parasphenoidal teeth. Head a bony casque, with projecting labial borders. Tympanum distinct. Fingers with a slight rudiment of web; toes webbed, the tips dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra strongly dilated.

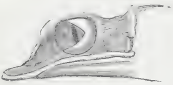
Yucatan.

1. Triprion petasatus.

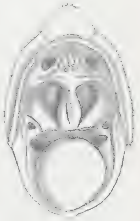
Pharyngodon petasatus, *Cope, Proc. Ac. Philad.* 1865, p. 193.
Triprion petasatus, *Cope, Proc. Ac. Philad.* 1866, p. 127, *and Journ. Ac. Philad.* (2) vi. 1866, pl. 25. f. 7 & 8.



Upper view of head.



Lateral view of head.



Open mouth.

Vomerine teeth in two small groups between the choanæ; parasphenoidal teeth in a simple series. Head entirely bony, rough; snout quite flat, projecting far beyond the mouth-opening, the latter being very inferior; canthus rostralis and superciliary ridges forming an elevated ridge; hinder edge of casque straight, raised; tympanum half the diameter of orbit. Fingers with a slight rudiment of web; toes short, two-thirds webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the shoulder and the eye. Skin smooth above, granulate beneath. Brownish above, spotted with darker; head with white punctuations; whitish beneath, immaculate. Male with an external subgular vocal sac; during the breeding-season the inner side of the first finger covered with blackish rugosities.

Yucatan.

a–b. ♂.	Yucatan.	M. G. A. Boulenger [P.].
c–d. ♀.	Yucatan.	

9. PELOBATIDÆ.

Discoglossidæ, part., Asterophrydidæ, Alytidæ, part., Bombinatoridæ, part., *Günth. Cat. Batr. Sal.*

Asterophrydidæ and Scaphiopodidæ, part., *Cope, Nat. Hist. Rev.* 1865.

Asterophrydidæ, Pelodytidæ, Scaphiopodidæ, *Cope, Journ. Ac. Philad.* (2) vi. 1866.

Bombinatoridæ, part., Alytidæ, part., Discoglossidæ, part., *Mivart, Proc. Zool. Soc.* 1869.

Pelobatidæ and Asterophrydidæ, *Lataste, Actes Soc. Linn. Bord.* xxx. p. 339.

Upper jaw toothed; diapophyses of sacral vertebra strongly dilated; no ribs; terminal phalanges simple.

The coracoids and precoracoids are more or less strongly curved. The omosternum is constantly present, but small and cartilaginous. The sternum is a cartilaginous plate, or a bony style with cartilaginous disk.

The vertebræ are procœlian in most of the genera; in *Megalophrys*, and perhaps also in *Asterophrys*, they are opisthocœlian, as in the *Discoglossidæ* and *Aglossa*. But, in this case, this character does not seem to be of such importance as was believed by some authors. It has been noticed that, in some individuals of various species, the intervertebral spheres do not become firmly attached to either centrum at maturity*; and one adult specimen of *Xenophrys monticola* in the British Museum exhibits a very anomalous mode of articulation, the fourth vertebra being biconcave, the fifth biconvex, the others procœlian.

A fronto-parietal fontanelle is present in *Pelodytes*, absent in the other genera.

The pupil is vertically elliptic.

Synopsis of the Genera.

I. Coccyx and sacrum confluent; toes extensively webbed.

Sternum a cartilaginous plate; tympanum present. 1. **Scaphiopus**, p. 433.

Sternum with a bony style; tympanum absent. 2. **Pelobates**, p. 437.

II. Sacral vertebra with two condyles for articulation with coccyx; toes nearly free or very shortly webbed.

Sternum with a bony style; vomerine teeth on a level with the front edge of the choanæ; diapophyses of sacral vertebra extremely dilated .... 3. **Pelodytes**, p. 438.

Sternum without bony style; vomerine teeth in a long transverse series behind the choanæ .... 4. **Batrachopsis**, p. 439.

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* *Cf.* Dugès, 'Recherches sur l'Ostéologie et la Myologie des Batraciens,' and Cope, Journ. Ac. Philad. (2) vi. 1866, p. 67.

III. Sacral vertebra articulated to coccyx by one condyle; toes free or very shortly webbed.

Vomerine teeth none; sternum with a bony style; vertebræ procœlian . . . . 5. **Leptobrachium**, p. 440.

Vomerine teeth; sternum with a bony style; vertebræ procœlian.
6. **Xenophrys**, p. 441.

Vomerine teeth; sternum with a bony style; vertebræ opisthocœlian; upper eyelid prolonged into a horn.
7. **Megalophrys**, p. 442.

Vomerine teeth; tongue entirely adherent; vertebræ opisthocœlian (?) . . . . 8. **Asterophrys**, p. 443.

1. SCAPHIOPUS.

Scaphiopus, *Holbr. N.-Amer. Herp.* i. p. 85; *Tschudi, Batr.* p. 83; *Dum. & Bibr.* viii. p. 471; *Günth. Cat.* p. 38; *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. p. 81.
Spea, *Cope, Journ. Ac. Philad.* (2) vi. p. 81.

Pupil erect. Tongue subcircular or oval, entire or slightly nicked, and free behind. Vomerine teeth in two small groups. Tympanum more or less distinct, or hidden. Fingers generally with a rudiment of web; toes webbed; tips of fingers and toes not dilated. Inner metatarsal tubercle shovel-shaped; outer metatarsals separated by web. Omosternum cartilaginous, rudimentary; sternum a cartilaginous plate. Vertebræ procœlian; sacral vertebra with rather strongly dilated diapophyses, confluent with coccyx.

N. America; Mexico.

Synopsis of the Species.

I. Derm of head involved in cranial ossification.

A round gland on each side of the thorax, near the axilla . . . . 1. *solitarius*, p. 434.
No pectoral gland; canthus rostralis obsolete; loreal region oblique . . . . 2. *couchii*, p. 434.
No pectoral gland; canthus rostralis strong; loreal region nearly vertical . 3. *rectifrenis*, p. 435.

II. Derm of head free from cranial ossification.

1. Eustachian tubes moderate.

Vomerine teeth between the choanæ; tympanum distinct . . . . 4. *hammondii*, p. 435.
Vomerine teeth between the choanæ; tympanum concealed or scarcely visible; skin nearly smooth above . . . . . . 5. *bombifrons*, p. 435.
Vomerine teeth on a level with the hinder edge of the choanæ; tympanum concealed . . . . 6. *dugesii*, p. 436.

Vomerine teeth on a level with the hinder edge of the choanæ; a large gland in the upper integument of tibia . . . . . . 7. *multiplicatus*, p. 436.
  2. Eustachian tubes exceedingly minute, much smaller than the choanæ . . . . 8. *stagnalis*, p. 436.

1. Scaphiopus solitarius.

Scaphiopus solitarius, *Günth. Cat.* p. 38.

Scaphiopus solitarius, *Holbr. N.-Amer. Herp.* i. p. 85, pl. 12, & 2nd edit. iv. pl. 27; *Tschudi, l. c.*; *Dum. & Bibr.* p. 473; *Leconte, Proc. Ac. Philad.* vii. 1855, p. 429; *Brocchi, Bull. Soc. Philom.* (7) iii. 1879, p. 23, *and Miss. Sc. Mex., Batr.* p. 23, pl. 9. f. 3.

Rana holbrookii, *Harlan, Med. Res.* p. 105.

Scaphiopus holbrookii, *Baird, Rep. Expl. Surv.* iv. *Rept.* 1859, pl. 28. f. 1; *Cope, Proc. Ac. Philad.* 1863, p. 54.

Tongue subcircular or oval, nicked behind. Vomerine teeth in two small groups on a level with the hinder edge of the choanæ. Snout rounded, with indistinct canthus rostralis; nostril nearer the tip of the snout than the eye; interorbital space as broad as, or a little broader than, the upper eyelid; upper surface of head bony, rough; tympanum distinct, half the width of the eye. Fingers short, with a rudiment of web, first a little longer than second; toes short, webbed to the tips; subarticular tubercles indistinct; three metacarpal tubercles; metatarsal shovel longer than first toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the tympanum. Skin of back minutely tubercular, of sides more coarsely; a small, rounded, prominent parotoid gland; a small, rounded, porous gland on each side of the thorax near the axilla; beneath nearly smooth. Brownish or olive above, marbled with darker; edge of the metatarsal shovel black. Male with a subgular vocal sac, and during the breeding-season black rugosities on the inner side of the first two fingers.

United States.

a. ♂.	Charleston.	P. L. Sclater, Esq. [P.].
b. ♂.	N. America.	E. Doubleday, Esq. [P.].
c. Skeleton.	United States.	

2. Scaphiopus couchii.

Scaphiopus couchii, *Baird, Proc. Ac. Philad.* vii. 1855, p. 62, *and U.S. & Mex. Bound. Surv.* ii. 1859, *Rept.* p. 28, pl. 35. f. 1–6; *Cope, Proc. Ac. Philad.* 1863, p. 52; *Brocchi, Miss. Sc. Mex., Batr.* p. 26.

—— varius, *Cope, l. c.* p. 52; *Brocchi, l. c.* p. 27.

Tongue subcircular, slightly emarginate. Vomerine teeth between the choanæ or opposite their posterior border. Snout prominent; canthus rostralis obsolete; upper surface of head bony, rugose; tympanum concealed or distinct. Toes fully webbed; cuneiform shovel elongate. Skin tuberculous, sometimes rather smooth; abdomen slightly rugose; parotoid flat. Yellowish or yellowish olive above, with brown bars.

Tamaulipas; Rio Grande; Lower California.

3. Scaphiopus rectifrenis.

Scaphiopus rectifrenis, *Cope, Proc. Ac. Philad.* 1863, p. 53; *Brocchi, Miss. Sc. Mex., Batr.* p. 27.

Vomerine teeth in closely approximate fasciculi behind the choanæ. Snout prominent, truncate in profile; canthus rostralis strong; loreal region nearly vertical; upper surface of head bony, rough; tympanum concealed. Skin of head and body sparsely tuberculous; parotoids rather lateral; a weak antepectoral fold. Above brown or brownish grey, the tubercles tipped with brown; a brown line extends from each eye to sacrum, converging posteriorly.

Tamaulipas; Coahuila.

4. Scaphiopus hammondii.

Scaphiopus hammondii, *Baird, Rep. Expl. Surv.* iv. *Rept.* 1859, pl. 28. f. 2; *Cope, Proc. Ac. Philad.* 1863, p. 53.

Spea hammondii, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 81.

Tongue very large, entire. Vomerine teeth in transverse series between the choanæ. Snout somewhat truncate, perpendicular in profile; region of canthus rostralis concave; tympanum distinct, one fourth the extent of the eye. Metatarsal shovel produced. Skin roughly tuberculous, especially on the sides, thick on the occiput; parotoid flat, small; beneath nearly smooth. Colour above stone-brown, with traces of two paler dorsal bands; tubercles fulvous-tipped; extremities shaded with the same; below whitish, immaculate.

California.

5. Scaphiopus bombifrons.

Scaphiopus bombifrons, *Cope, Proc. Ac. Philad.* 1863, p. 53.

Spea bombifrons, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 81.

Tongue entire. Vomerine teeth in oblique fasciculi or short series between the choanæ. Snout truncate, elevated, thickened transversely; canthus rostralis replaced by a concavity; tympanum concealed or scarcely visible. Palmation of toes deeply repand; metatarsal shovel produced. Skin nearly smooth, roughest on the sides; parotoid flat, small. Pale ashen or brown above, with numerous plumbeous vermiculations; outer border of tarsus and foot light; a dark spot on canthus rostralis.

Fort Union, Missouri; Platte River; Texas.

6. Scaphiopus dugesii.

Scaphiopus dugesi, *Brocchi, Bull. Soc. Philom.* (7) iii. 1879, p. 23, *and Miss. Sc. Mex., Batr.* p. 94, pl. 9. f. 4.

Tongue subcircular, entire. Vomerine teeth in two small groups on a level with the hinder edge of the choanæ. Head small; snout rounded, rather prominent, without canthus rostralis; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; upper surface of head smooth; tympanum concealed. Fingers short, with or without a slight rudiment of web, first longer than second; toes short, the web considerably emarginate and extending only as a fringe to the tip of the fourth toe; subarticular tubercles indistinct; two metacarpal tubercles; metatarsal shovel as long as first toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Head and back tubercular; limbs and inferior surfaces smooth; a curved fold above the tympanum; parotoids indistinct. Olive above, spotted or marbled with darker; metatarsal shovel black. Male with a subgular vocal sac, and, during the breeding-season, black rugosities on the inner side of the first two fingers.

Mexico.

a–b. ♂ ♀.	Mexico.

7. Scaphiopus multiplicatus.

Scaphiopus multiplicatus, *Cope, Proc. Ac. Philad.* 1863, p. 52; *Brocchi, Miss. Sc. Mex., Batr.* p. 25.
Spea multiplicata, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 81.

Tongue entire. Vomerine teeth in two fasciculi opposite posterior margins of choanæ. Head very short; snout thick, rounded; tympanum covered by a portion of the parotoid gland anterior to this. Metatarsal tubercle rather short, very prominent. Skin of upper surfaces coarsely tuberculous, that of the crown thick, of the extremities nearly smooth; parotoid very large, extending beyond scapula, bent upon the side, bounded inferiorly by a strong fold, which extends to the groin; below this, on the sides, are two or more others; from the eye a strong fold passes posterior to the angle of the mouth and across the gular region; a large gland occupies most of the length of tibia; abdomen minutely, pubic region coarsely, rugose. Above ashy brown, below yellowish ash.

Mexico.

8. Scaphiopus stagnalis.

Spea stagnalis, *Cope, Yarrow's Rep. V. Zool.* p. 525, pl. 25. f. 6–8.

Tongue round, entire. Vomerine teeth between the choanæ, either anteriorly or posteriorly. Eustachian tubes exceedingly minute, much smaller than the choanæ. Snout projecting beyond mouth; nostrils terminal; tympanum concealed. Web of hind foot reaching middle of longest toe; tarsal shovel large. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the middle of the parotoid gland. The latter flat and thin. Colour light brown, with a few dark speckles; a spot on canthus rostralis.

New Mexico.

2. PELOBATES.

Pelobates, *Wagl. Syst. Amph.* p. 206; *Tschudi, Batr.* p. 83; *Dum. & Bibr.* viii. p. 475; *Günth. Cat.* p. 40; *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. 1866, p. 81.

Cultripes, *Müller, Tiedem. Zeitschr. Phys.* iv. p. 212, *and Isis,* 1832, p. 336; *Cope, Journ. Ac. Philad.* (2) vi. p. 81.

Didocus, *Cope, l. c.*

Pupil erect. Tongue circular, slightly nicked and free behind. Vomerine teeth in two small groups. No tympanum. Fingers free; toes extensively webbed, the tips not dilated. Outer metatarsals separated by web. Inner metatarsal tubercle shovel-shaped. Omosternum cartilaginous, rudimentary; sternum with a bony style. Vertebræ procœlian; diapophyses of sacral vertebra very strongly dilated; sacral and coccygeal vertebræ confluent.

Europe.

1. Pelobates fuscus.

Pelobates fuscus, *Günth. Cat.* p. 40.

Rösel, Hist. Ran. p. 69, pls. 17–19.

Bufo fuscus, *Laur. Syn. Rept.* pp. 28 & 122; *Schneid. Hist. Amph.* p. 196; *Latr. Rept.* ii. p. 109; *Daud. Rain.* p. 81, pl. 80. f. 1, *and Rept.* viii. p. 161; *Cuv. R. A.*; *Merr. Tent.* p. 187.

Rana fusca, *Meyer, Syn. Rept.* p. 10; *Sturm, Deutschl. Faun.* iii. Heft 1; *Gravenh. Delic.* p. 32.

—— alliacea, *Shaw, Zool.* iii. p. 146, pls. 41 & 42.

Bombina marmorata, *Koch, l. c.*; *Hahn, Faun. Boic.* pl. 21. f. b.

Bombinator fuscus, *Fitz. l. c.*

Pelobates fuscus, *Wagl. l. c.*; *Bonap. Icon. Faun. Ital.*; *Tschudi, l. c.*; *Dum. & Bibr.* p. 477; *Fatio, Vert. Suisse,* iii. p. 376; *Schreiber, Herp. Eur.* p. 90; *De Betta, Faun. Ital., Rett. Anf.* p. 71; *Leydig, An. Batr.* p. 77; *Lessona, Atti Ac. Linc., Mem. Cl. Sc.-fis. &c.* i. p. 1077, pl. 3.

Cultripes minor, *Müller, Isis,* xxv. p. 538.

Pelobates insubricus, *Cornal. Atti Soc. Vent. Tent.* ii. p. 44.

Vomerine teeth in two straight or slightly oblique series between the choanæ. Snout rounded, without canthus rostralis; fronto-parietal region bony, rough, convex. First and second fingers equal; toes entirely webbed; tips of fingers and toes pointed; no subarticular tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the angle of the mouth. Skin smooth. Brown above, marbled with darker; metatarsal spur yellowish brown. Male without vocal sac, with a large elliptic gland on the upperside of the arm.

Central Europe.

a–b. ♀ & hgr.	Hanover.	Dr. J. E. Gray [P.].
c–d. ♂.	Paris.	
e–f. Yg.	Paris.	
g. Skeleton.	Bondy.	
h. ♂.	Nantes.	
i. Larva.	Bologna.	Prof. J. J. Bianconi [P.].

2. Pelobates cultripes.

Pelobates cultripes, *Günth. Cat.* p. 41.
Rana cultripes, *Cuv. R. A.*
Cultripes provincialis, *Müller, Isis,* xxv. 1832, p. 538.
Bombinator fuscus, *Dugès, Rech. Ostéol. Batr.*
Pelobates cultripes, *Tschudi, l. c.*; *Dum. & Bibr.* p. 483; *Schreib. Herp. Eur.* p. 92; *Lataste, Herp. Gir.* p. 263.
? Didocus calcaratus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 81.

Closely allied to the preceding species, from which it differs in the following points:—Fronto-parietal region flat: temporal region bony, rough, the orbit being completely enclosed. Metatarsal spur black.

France; Spain and Portugal.

a. ♀.	France.

3. PELODYTES.

Pelodytes, (*Fitz.*) *Bonap. Faun. Ital.*; *Dum. & Bibr.* viii. p. 460; *Günth. Cat.* p. 35; *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.
Obstetricans, sp., *Dugès, Rech. Ostéol. Batr.*
Alytes, sp., *Tschudi, Batr.* p. 84.

Pupil erect. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two small groups. Tympanum slightly distinct. Fingers free, toes webbed at the base, the tips not dilated. Outer metatarsals separated by web. Omosternum cartilaginous; sternum with a bony style. Vertebræ procœlian; diapophyses of sacral vertebra very strongly dilated, with two condyles for articulation with coccyx.

Western Europe.

1. Pelodytes punctatus.

Pelodytes punctatus, *Günth. Cat.* p. 35.
Rana punctata, *Daud. Rain.* p. 51, pl. 16. f. 11, *and Rept.* viii. p. 100.
—— plicata, *Daud. Rain.* p. 53, *and Rept.* p. 102; *Cuv. R. A.*
—— daudinii, *Merr. Tent.* p. 177.
Obstetricans punctatus, *Dugès, l. c.*
Alytes punctatus, *Tschudi, l. c.*
Pelodytes punctatus, (*Fitz.*) *Bonap. l. c.*; *Dum. & Bibr.* p. 463; *Fatio, Vert. Suisse,* iii. p. 353; *Schreib. Herp. Eur.* p. 99; *De Betta, Faun. Ital., Rett. Anf.* p. 68; *Lataste, Herp. Gir.* p. 242; *Bouleng. Bull. Soc. Zool. France,* 1881, p. 73.
—— daudini, *Bosca, Bull. Soc. Zool. France,* 1880, p. 255.

Vomerine teeth in two short transverse series on a level with the front edge of the choanæ. Snout subacuminate, with moderately distinct canthus rostralis; tympanum much smaller than the eye. Fingers and toes rather slender; first finger shorter than second; toes webbed at the base and fringed, the fringe being greatly developed in the breeding male; subarticular tubercles rather indistinct; three palmar tubercles; a very small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or between the eye and the tip of the snout. Upper surfaces with smooth flat warts; a glandular fold above the tympanum; an angular fold on each side of the breast near the arm, connected with its fellow by a very distinct cross fold; lower belly and under surface of thighs granular. Greyish or olive above, with small green spots; a rather indistinct X-shaped light figure on the front part of the back; lower surfaces white, immaculate. Male with a subgular vocal sac; during the breeding-season, the chin, the granules of the belly, and the lower surface of the toes with blackish rugosities; five pairs of rugose blackish plates—one on the side of the breast, one on the lower side of the breast, one on the inner side of the forearm, and one on each of the two inner fingers.

France; Spain and Portugal.

a. ♂.	Paris.	M. G. A. Boulenger [P.].
b. ♀.	Nantes.	
c-d. Hgr.	France.	Paris Museum.
e. Many spec., ♂ ♀.	Valencia, Spain.	Lord Lilford [P.].

4. BATRACHOPSIS.

Pupil erect. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in a long transverse series behind the choanæ. Tympanum distinct. Fingers free; toes slightly webbed at the base, the tips not dilated. Outer metatarsals slightly separated. Omosternum cartilaginous; sternum a small cartilaginous plate. Vertebræ procœlian; sacral vertebra with rather strongly dilated diapophyses, and two condyles for articulation with coccyx.

New Guinea.

1. Batrachopsis melanopyga.

Asterophrys melanopyga, *Doria, Ann. Mus. Civ. Genov.* vi. 1874, p. 355, pl. 12. f. K; *Peters & Doria, eod. loc.* xiii. 1878, p. 417.

Vomerine teeth in a strong, transverse, straight or slightly arched, scarcely interrupted series just behind the choanæ, not extending outwards beyond the latter. Head large; snout rounded, with angular canthus rostralis and very oblique loreal region; interorbital space as broad as the upper eyelid; tympanum more or less distinct, vertically oval, its vertical diameter three fourths the width of the eye. Fingers slender, first and second equal; toes slender, webbed at the base, the tips slightly swollen; subarticular tubercles strong; a small, blunt, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper parts more or less distinctly granulate; a strong fold from the posterior corner of the eye to the side of the body; a few other, narrower, curved, symmetrical folds along the back; lower parts smooth. Brown above, indistinctly maculated with darker; a streak on canthus rostralis and below outer glandular fold, and another across the interorbital space, black; limbs regularly cross-barred with blackish; beneath yellowish or brownish. Male with an internal subgular vocal sac; during the breeding-season the inner side of the first two digits and of the strong metacarpal tubercle covered with black spines. In the female the two inner fingers are lobate, as in many *Limnodynastes*.

New Guinea.

a. ♀.	Mount Arfak.	Marquis J. Doria [P.].
b. ♂.	New Guinea.	

5. LEPTOBRACHIUM.

Leptobrachium, *Tschudi, Batr.* p. 81; *Günth. Cat.* p. 36; *Cope, Nat. Hist. Rev.* 1865, p. 107, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.

Pupil erect. Tongue heart-shaped, free behind. Vomerine teeth none. Tympanum rather indistinct or hidden. Fingers free; toes webbed at the base, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous, rudimentary; sternum with a bony style. Vertebræ procœlian; sacral vertebra with very much dilated diapophyses, and one condyle for articulation with coccyx.

E. Indies.

1. Leptobrachium gracile.

Leptobrachium gracile, *Günth. Proc. Zool. Soc.* 1872, p. 598.

Tongue very large, filling the entire cavity of the mouth. Snout rounded, as long as the greatest orbital diameter, with distinct canthus rostralis; nostril nearer the tip of the snout than the eye; interorbital space not quite so broad as the upper eyelid; tympanum visible, half the width of the eye. Fingers slender, first and second equal, third very much longer than the others; toes rather slender, slightly webbed; tips of fingers and toes blunt; subarticular tubercles indistinct; a small, elongate, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin perfectly smooth; a curved linear fold above the tympanum. Upper parts greyish olive; a whitish spot below the eye; upper arm and elbow whitish; hind limb with blackish cross bars; lower and lateral parts of the body and hind limb with rather large irregular black spots.

Borneo.

a. ♀.	Matang.	(Type.)

2. Leptobrachium hasseltii.

Leptobrachium hasseltii, *Günth. Cat.* p. 36.
Leptobrachium hasseltii, *Tschudi, l. c.*

Head rather large; snout rounded, as long as the greatest orbital diameter, with distinct canthus rostralis; nostril a little nearer the tip of the snout than the eye; interorbital space a little broader than the upper eyelid; tympanum very indistinct, half the width of the eye. Fingers moderate, first and second equal; toes very short, webbed at the base; tips of fingers and toes blunt; subarticular tubercles indistinct; a small, subcircular, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the angle of the mouth. Skin of back distinctly, of belly indistinctly granular. Brownish or olive above, spotted with black; hind limbs cross-barred with black. Male with a subgular vocal sac.

E. Indies.

a–c. Yg.	Pegu.	W. Theobald, Esq. [C.].
d. Hgr. (very bad state).	Birmah.	W. Theobald, Esq. [C.].
e. ♀.	East Indies.	
f. ♂.	ava.	Dr. Bleeker.

6. XENOPHRYS.

Xenophrys, *Günth. Rept. Brit. Ind.* p. 414; *Cope, Nat. Hist. Rev.* 1865, p. 107, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.

Pupil erect. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two small groups. Tympanum scarcely distinct. Fingers free; toes nearly free, the tips not dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous; sternum with a bony style. Vertebræ procœlian; sacral vertebra with strongly dilated diapophyses, and one condyle for articulation with coccyx.

Mountains of India.

1. Xenophrys monticola.

Xenophrys monticola, *Günth. Rept. Brit. Ind.* p. 414, pl. 26. f. H: *Anderson, Proc. Zool. Soc.* 1871, p. 200.
—— gigas, *Jerdon, Proc. As. Soc.* 1870, p. 85.

Vomerine teeth in two small groups a little behind the choanæ. Head much depressed; snout very short, truncated, with angular canthus rostralis and deeply concave loreal region; interorbital space broad, slightly concave; tympanum slightly distinct, vertically oval, about two thirds the width of the eye. First finger not extending beyond second; toes with a rudiment of web; tips of fingers and toes slightly swollen; subarticular and metatarsal tubercles indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, the tip of the snout, or a little beyond the latter. Skin smooth or minutely tubercular above; generally a V-shaped linear raised fold on the nape. Olive-brown above; a dark, light-edged, triangular spot between the eyes; generally one or two other angular markings on the back: generally a dark band along each side of the head; hind limbs cross-barred; throat and breast marbled with brown. Male with two internal vocal sacs.

Himalayan Region; Birmah.

a. Hgr.	Sikkim.	Messrs. v. Schlagintweit [C.]. (Type of *Xenophrys monticola.*)
b–g. Hgr.	Sikkim.	T. C. Jerdon, Esq. [P.].
h. Many spec.: ♂, ♀, hgr., & yg.	Darjeeling.	T. C. Jerdon, Esq. [P.].
i–m. Hgr.	Darjeeling.	T. C. Jerdon, Esq. [P.].
n. Yg.	Khassia.	Sir W. Hooker [P.].
o. Hgr.	Pegu.	W. Theobald, Esq. [P.].

7. MEGALOPHRYS.

Megalophrys, *Kuhl, Bull. Soc. Nat.*; *Wagl. Syst. Amph.* p. 204; *Tschudi, Batr.* p. 82; *Dum. & Bibr.* viii. p. 456; *Günth. Cat.* p. 36; *Cope, Nat. Hist. Rev.* 1865, p. 107, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.

Ceratophryne, *Günth. Cat.* p. 136.

Pupil erect. Tongue subcircular, indistinctly nicked and free behind. Vomerine teeth in two small groups. Tympanum hidden. Fingers free: toes slightly webbed, the tips not dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous; sternum with a bony style. Vertebræ opisthocœlian; sacral vertebra with strongly dilated diapophyses, and one condyle for articulation with coccyx.

E. Indies.

1. Megalophrys montana.

Megalophrys montana, *Günth. Cat.* p. 36.

Megalophrys montana, (*Kuhl*) *Wagl. Syst. Amph.* p. 204; *Tschudi, Batr.* p. 82; *Dum. & Bibr.* p. 458; *Cantor, Cat. Mal. Rept.* p. 140; *Günth. Rept. Brit. Ind.* p. 413, *and Ann. & Mag. N. H.* (4) xi. p. 419.

Ceratophrys montana, *Schleg. Abbild.* t. x. f. 3.

Vomerine teeth in two small groups a little behind the choanæ. Head much depressed; snout very short, truncated, with angular canthus rostralis and deeply concave loreal region: interorbital space very broad, slightly concave. First finger not extending beyond second; toes webbed at the base; tips of fingers and toes blunt or slightly swollen; subarticular and metatarsal tubercles indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the angle of the mouth or a little beyond. Skin with scattered conical warts; upper eyelid tubercular, produced into a horn-like appendage: a narrow, raised glandular fold on each side of the back; similar, oblique folds across the hind limbs; lower surfaces granular. Olive-brown above, with a large triangular blackish spot between the eyes; a blackish oblique bar below the eye; limbs cross-barred; lower surfaces light brown, marbled with darker. Male without vocal sac.

E. Indies.

a. ♀.	Java.	Leyden Museum.
b, c. ♂ ♀.	Java.	
d. ♀.	Java.	Mr. H. O. Forbes [C.].
(This specimen bears a slight dermal appendage on the tip of the snout.)		
e. Skeleton.	Java.	
f. ♂.	Java?	Dr. Bleeker.
g. ♀.	Sumatra.	Hr. Carl Bock [C.].
h–i. Hgr.	Dinagat Island.	Mr. Everett [C.].
k. Hgr.	Ceylon.	

2. Megalophrys nasuta.

Ceratophryne nasuta, *Günth. Cat.* p. 36.
Megalophrys montana, *Cantor, Cat. Mal. Rept.* p. 140.
Ceratophryne nasuta, *Schlegel, Handb. Dierk.* ii. p. 57, pl. 4. f. 72.
Megalophrys montana, part., *Günth. Rept. Brit. Ind.* p. 413.
—— chysii, *Edeling, Tydschr. Dierk.* 1864, p. 205, *and Natuurk. Tydschr. Nederl. Ind.* 1864, xxvii. p. 265.
—— nasuta, *Günth. Ann. & Mag. N. H.* (4) xi. p. 419.

Very closely allied to the preceding species, from which it differs in the greater length of the palpebral horn-like appendage, and especially in the presence of a similar appendage on the tip of the snout. In full-grown individuals the skin becomes entirely adherent to the skull, and the skin of the back is hardened by bony deposits, thus bearing great analogy to the dorsal shield of several species of *Ceratophrys*. This occurs also, but to a lesser degree, in the preceding species.

E. Indies.

a. Yg.	Sumatra.	Sir A. Smith [P.].
b–c. ♀.	Matang.	
d. Yg.	Sarawak.	Mr. Everett [C.].
e. ♂.	Pinang.	Dr. Cantor's Collection.

8. ASTEROPHRYS.

Asterophrys, *Tschudi, Batr.* p. 82; *Günth. Cat.* p. 37; *Cope, Nat. Hist. Rev.* 1865, p. 107, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.

Tongue large, entirely adherent. Vomerine teeth numerous, forming a curved line on the external border of the vomers. Tympanum hidden. Fingers and toes free (*Tschudi*). Vertebræ opisthocœlian; one sacral condyle for articulation with coccyx (*Cope*).

New Guinea.

1. Asterophrys turpicola.

Asterophrys turpicola, *Günth. Cat.* p. 37.
Asterophrys turpicola, *(Müll.) Tschudi, l. c.*
Ceratophrys turpicola, *Schleg. Abbild.* p. 30, pl. 10. f. 4.

Head very large, angular; upper edge of the eyelid with several dermal appendages. Extremities moderate. Dark brown above; lower surfaces lighter, marbled with darker.

New Guinea.

The following genus must evidently be referred to this family: but the characters given are insufficient to ascertain its place:—

Ranaster, Macleay, Proc. Linn. Soc. N.S. Wales, ii. 1878, p. 135.

"Habit rather stout. Head large and rounded. Legs rather short. Fingers and toes tapering and slightly webbed, with tubercular pads on the carpal and tarsal bones. Skin smooth. Maxillary teeth conspicuous, acute, bicuspid, and sub-distant. Vomerine teeth conspicuous and sub-distant, situated on a long, straight, transverse ridge, sharply divided in the middle. Inner nostrils rather large and in front of the vomerine ridge. Tongue largely notched behind. Tympanum distinct. Sacral vertebra dilated. No parotoids."

R. convexiusculus, Macleay, l. c. p. 136.—Katow, N. Guinea.

10. DISCOGLOSSIDÆ.

Discoglossidæ, part., Alytidæ, part., Bombinatoridæ, part., *Günth. Cat. Batr. Sal.*; *Mivart, Proc. Zool. Soc.* 1869.
Discoglossidæ, *Cope, Nat. Hist. Rev.* 1865, *and Journ. Ac. Philad.* (2) vi. 1866.
Discoglossidæ and Alytidæ, *Lataste, Rev. Intern. Sc.* 1878, ii. p. 488; *and Actes Soc. Linn. Bord.* xxx. p. 339.

Upper jaw toothed; diapophyses of sacral vertebra dilated; short ribs articulated to the anterior diapophyses.

In the presence of ribs and the opisthocœlian vertebræ, the members of this very natural family closely approach the higher Tailed Batrachians. In their larval state they are also well distinguished by having the spiraculum situated mesially on the thoracic region, whilst in all the other *Phaneroglossa* it is situated on the left side.

The sternal apparatus is the same in all four genera, and remarkable for the shape of the sternum, which forms two slender postero-exteriorly diverging styles.

The coccyx is furnished at its base with posteriorly diverging diapophyses. In *Bombinator* it is attached to one condyle; in the other genera there are two condyles.

A more or less extensive fontanelle is present. *Bombinator* and *Alytes*, and perhaps also *Liopelma*, have true ossa nasalia.

Synopsis of the Genera.

Tympanic disk present, slightly distinct or concealed; diapophyses of sacral vertebra moderately dilated; pupil triangular.
1. **Discoglossus**, p. 445.

No tympanic disk; tongue adherent; diapophyses of sacral vertebra strongly dilated; pupil triangular .... 2. **Bombinator**, p. 446.

No tympanic disk; tongue free behind; diapophyses of sacral vertebra feebly dilated; pupil triangular.
3. **Liopelma**, p. 447.

Tympanum distinct; diapophyses of sacral vertebra moderately dilated; pupil elliptical, erect ...... 4. **Alytes**, p. 448.

1. DISCOGLOSSUS.

Discoglossus, *Otth, Neue Denkschr. Allgem. schweiz. naturf. Ges.* i. p. 6; *Tschudi, Batr.* p. 80; *Dum. & Bibr.* viii. p. 422; *Günth. Cat.* p. 35; *Cope, Nat. Hist. Rev.* 1865, p. 105, *and Journ. Ac. Philad.* (2) vi. 1866, p. 76.
Pseudis, sp., *Gené, Syn. Rept. Sard.* p. 24.
Colodactylus, *Tschudi, Faun. Per., Herp.* p. 68.

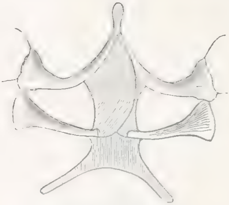
Pupil triangular. Tongue circular, entire, scarcely free behind. Vomerine teeth. Tympanum slightly distinct or concealed. Fingers free; toes webbed, the tips not dilated. Outer metatarsals separated by web. A rudimentary omosternum; sternum two slender diverging cartilaginous styles; diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

S. Europe; N.W. Africa.

1. Discoglossus pictus.

Discoglossus pictus, *Günth. Cat.* p. 35.
Cetti, Anf. e Pesc. Sard. iii. p. 38.
Rana temporaria, *Rozet, Voy. Alg.* i. p. 230.
Discoglossus pictus, *Otth, l. c.* f. 1–8; *Tschudi, l. c.*; *Bonap. Faun. Ital.*; *Dum. & Bibr.* p. 425; *Strauch, Mém. Ac. Sc. St. Pétersb.* (7) iv. no. 7, p. 77; *De Betta, Rett. Anf. Grec., Atti Inst. Venet.* xiii. p. 77; *Steindachn. Novara, Amph.* p. 28; *De Betta, Faun. Ital. Rett. Anf.*, p. 67; *Schreiber, Herp. Eur.* p. 112; *Camerano, Atti Ac. Tor.* xiv. p. 443, f. 6–8; *Lataste, Actes Soc. Linn. Bord.* xxxiii. p. 275, pls. 3, 4, 5.
—— sardus, *Tschudi, l. c.*; *Bonap. l. c.*; *Camerano, l. c.* p. 437, f. 4–5.
Pseudis sardoa, *Gené, l. c.* pl. v. f. 1–3, 5–6.
Rana picta, *Schleg. l. c.*
? Colodactylus cærulescens, *Tschudi, Faun. Per., Herp.* p. 68, pl. 11. f. 2; *Peters, Mon. Berl. Ac.* 1873, p. 414, pl. 3. f. 1.
Discoglossus scovazzii, *Camerano, Atti Ac. Tor.* xiii. p. 548, & xiv. p. 447, f. 1–3.

Vomerine teeth in a long, scarcely interrupted, straight series across the palate behind the choanæ. Snout rather prominent, longer than the greatest orbital diameter, without canthus rostralis; interorbital space as broad as, or a little narrower than, the upper eyelid; tympanum generally hidden, sometimes slightly distinct. First finger shorter than second; three metacarpal tubercles, the inner very much developed in males; toes nearly entirely webbed in the latter, at the base only in females; subarticular tubercles indistinct; a single, small, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or between the eye and the tip of the snout. Skin smooth, or with small flat marks on the upper surfaces. Brownish or olive above, with dark light-edged spots, sometimes confluent into broad longitudinal bands along the head and back; sometimes three light longitudinal dorsal stripes. Male without vocal sac; during the breeding-season there are black rugosities on the chin, on the inner metacarpal tubercle, on the inner digit, and on the free border of the web between the toes.



Sternal apparatus.

S. Europe; N.W. Africa.

a–d. ♂ ♀.	—— ?	Dr. Heckel.
e. ♂.	Sardinia.	Leyden Museum.
f–h, i. ♂, ♀, & hgr.	Coruña, Spain.	Don V. L. Seoane [C.].
k–l. ♂.	Malta.	Miss E. Attersoll [P.].
m. Hgr.	Malta.	Capt. Feilden [P.].
n. ♂.	Algiers.	P. L. Sclater, Esq. [P.].
o. ♀.	Algiers.	
p, q. ♀ & hgr.	Tunis.	P. L. Sclater, Esq. [P.].

2. BOMBINATOR.

Bombinator, sp., *Merr. Tent. Herp.* p. 179.
Bombinator, *Wagl. Syst. Amph.* p. 206; *Tschudi, Batr.* p. 84; *Dum. & Bibr.* viii. p. 485; *Günth. Cat.* p. 41; *Cope, Nat. Hist. Rev.* 1865, p. 105, *and Journ. Ac. Philad.* (2) vi. 1866, p. 76.

Pupil triangular. Tongue circular, entire, adherent. Vomerine teeth. No tympanum; eustachian tubes generally very minute. Fingers free; toes webbed, the tips not dilated. Outer metatarsals separated by web. No omosternum; sternum two slender diverging cartilaginous styles. Diapophyses of sacral vertebra strongly dilated. Terminal phalanges simple.

Europe; Asia.

1. Bombinator igneus.

Bombinator igneus, *Günth. Cat.* p. 41.
Rösel, Hist. Ran. p. 97, pls. 22 & 23.
Rana bombina, *Linn. Faun. Suec.* p. 101, *and S. N.* p. 355; *Sturm, Deutschl. Faun.* iii.
Bufo igneus, *Laur. Syn. Rept.* pp. 29 & 129; *Schneid. Hist. Amph.* p. 157; *Latr. Rept.* ii. p. 110; *Griff. An. Kingd.* ix. p. 401.
Rana ignea, *Shaw, Zool.* iii. p. 116, pl. 35.
Bufo bombinus, *Daud. Rain.* p. 75, pl. 36, *and Rept.* viii. p. 146; *Schinz, Faun. Helvet.* p. 145.
Bombinator igneus, *Merr. l. c.*; *Gravenh. Delic.* p. 67; *Cuv. R. A.*; *Tschudi, l. c.*; *Bonap. Faun. Ital.*; *Dum. & Bibr.* p. 487; *Fatio, Vert. Suisse,* iii. p. 368; *Schreiber, Herp. Eur.* p. 95; *De Betta, Faun. Ital., Rett. Anf.* p. 70; *Lataste, Herp. Gir.* p. 275; *Leydig, An. Batr.* p. 50; *Bedriaga, Zool. Anz.* 1879, p. 664.
—— bombina, *Wagl. Syst.* p. 206.
—— brevipes, *Blasius, Wirbelth.*
—— pachypus, (*Fitz.*) *Bonap. Faun. Ital.*

Vomerine teeth in a short interrupted series behind the choanæ. Habit stout. Snout short, rounded. First finger shorter than second; two metacarpal tubercles; toes more or less webbed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the shoulder and the eye. Skin strongly warty above, smooth, or nearly so, below. Olive above, sometimes elegantly marbled with black (spec. *h–m*); beneath orange, marbled with black. Male without vocal sac; during the breeding-season the inner side of the forearm, of the inner metacarpal tubercle, and of the two inner fingers furnished with black rugosities; two small patches of same under the second and third toes.

Europe; Asia.

a. ♂.	Goslar.	Prof. Peters [P.].
b. Yg.	Hanover.	Dr. J. E. Gray [P.].
c. ♀.	France.	
d, e, f. ♀.	Europe.	
g. Many spec., ♂ ♀.	Chefoo.	R. Swinhoe [C.].
h–m. ♂ ♀.	China.	— Adams, Esq. [C.].

3. LIOPELMA.

Liopelma, (*Fitzing.*) *Steindachn. Verh. zool.-bot. Ges. Wien,* xi. 1861, p. 218.

Pupil triangular. Tongue circular, entire, free behind. Vomerine teeth. No tympanum nor eustachian tubes. Fingers free; toes webbed, the tips not dilated. Outer metatarsals separated by web. No omosternum; sternum two slender diverging cartilagineus styles. Diapophyses of sacral vertebra feebly dilated. Terminal phalanges simple.

New Zealand.

1. Liopelma hochstetteri.

Liopelma hochstetteri, (*Fitz.*) *Steindachn. l. c.* pl. 6, *and Novara, Amph.* p. 33.

Vomerine teeth behind the level of the choanæ, in two short series, slightly oblique towards front. Habit of *Alytes obstetricans*. Head large, not one third total length; snout rounded; canthus rostralis distinct, very short; interorbital space a little broader than the upper eyelid. Fingers short, blunt, first shorter than second; toes short, blunt, about half webbed; two flat metacarpal tubercles; a small, flat, inner metatarsal tubercle; subarticular tubercles of fingers and toes indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the eye. Upper surfaces with small smooth tubercles; lower surfaces smooth. Brown; limbs and lower surfaces lighter; head and back indistinctly spotted with blackish; limbs regularly cross-barred with blackish. Male without vocal sac.

New Zealand.

a. ♂.	New Zealand.	Sir A. Smith [P.].

4. ALYTES.

Bombinator, sp., *Merr. Tent.* p. 179.
Alytes, *Wagl. Syst. Amph.* p. 206; *Tschudi, Batr.* p. 84; *Dum. & Bibr.* viii. p. 465; *Günth. Cat.* p. 38; *Cope, Nat. Hist. Rev.* 1865, p. 105, *and Journ. Ac. Philad.* (2) vi. 1866, p. 76.
Ostetricans, sp., *Dugès, Rech. Ostéol. Batr.*
Ammoryctis, *Lataste, C. R. Ac. Paris,* 1879, p. 983.

Pupil elliptical, erect. Tongue circular, entire, scarcely free behind. Vomerine teeth. Tympanum distinct. Fingers free, toes webbed at the base, the tips not dilated. Outer metatarsal separated by web. No omosternum; sternum two slender diverging cartilaginous styles. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

Europe.

1. Alytes obstetricans.

Alytes obstetricans, *Günth. Cat.* p. 38.
Bufo obstetricans, *Laur. Syn. Rept.* pp. 28 & 128; *Brongn. Bull. Soc. Philom.* an. viii. p. 91, pl. 6. f. 4; *Latr. Sal.* p. 40, *and Rept.* ii. p. 112; *Daud. Rain.* p. 87, pl. 32. f. 1, *and Rept.* viii. p. 176; *Cuv. R. A.*
Rana campanisona, *Laur. l. c.* pp. 30 & 133.
—— obstetricans, *Wolf, Sturm's Deutschl. Faun.* iii. Heft 4.
Bombinator obstetricans, *Merr. Tent.* p. 179; *Gravenh. Delic.* p. 68.
Alytes obstetricans, *Wagl. l. c., and Icon. Amph.* t. 22. f. 3–5; *Schinz, Faun. Helvet.* p. 145; *Tschudi, Isis,* 1837, p. 702, *and Batr.* p. 84; *Bonap. Faun. Ital.*; *Dum. & Bibr.* viii. p. 467; *Fatio, Vert. Suisse,*

iii. p. 358; *Schreiber, Herp. Eur.* p. 102; *Lataste, Herp. Gir.* p. 249; *Leydig, An. Batr.* p. 64.
Obstetricans vulgaris, *Dugès, Rech. Ostéol. Batr.*
Alytes obstetricans delislei, *Lataste, Rev. Intern. Sc.* 2nd year, p. 543.

Vomerine teeth in a straight, interrupted line behind the choanæ. Habit stout. Snout rounded. Head about one third total length. Tympanum two thirds the width of the eye. First finger shorter than second, which equals fourth; three metacarpal tubercles; toes short, webbed at the base, fringed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. Skin of upper surfaces warty; a small parotoid, sometimes indistinct; a more or less distinct large gland in the upper integument of forearm and of tibia; belly granular. Olive-grey above, dotted and spotted with darker. Male without vocal sac.

France, Switzerland, Belgium, W. Germany.

a–c. ♂ & eggs.	Paris.	
d–e. ♂?	Bonn.	Dr. A. Günther [P.].
f. ♀ & eggs.	—— ?	Sir A. Smith [P.].

VAR. **boscæ.**

Alytes obstetricans boscai, *Lataste, Rev. Intern. Sc.* 2nd year, p. 543, *and Actes Soc. Linn. Bord.* xxxiv. pl. 11. f. 3–5.

Head larger, more than one third total length. Spots larger, more distinct.

Spain, Portugal.

g. ♂.	Valencia, Spain.	Lord Lilford [P.].
h–i. ♂.	Porto.	E. Allen, Esq.

2. Alytes cisternasii.

Alytes cisternasi, *Bosca, An. Soc. Esp.* viii. 1879, p. 217.
Ammoryctis cisternasi, *Lataste, C. R. Ac. Paris,* 1879, p. 983; *Bosca, An. Soc. Esp.* x. 1881, pl. 2. f. 1–6.

Differs from *A. obstetricans* chiefly in the following characters:—Habit stouter still. Interorbital space broader. Fourth finger shorter than first. Two metacarpal tubercles. Tibio-tarsal articulation not reaching the tympanum. Skin nearly smooth above.

Spain.

11. AMPHIGNATHODONTIDÆ.

Both jaws toothed; diapophyses of sacral vertebra dilated.

But in the presence of teeth in the lower jaw, the unique genus of this family agrees in all important characters with the *Hylidæ*, and particularly the genus *Nototrema*.

1. AMPHIGNATHODON.

Pupil horizontal. Tongue subcircular, indistinctly nicked, and slightly free behind. Vomerine teeth. Fingers free; toes webbed, the tips dilated into large disks. Outer metatarsals united. Female with a dorsal pouch, as in *Nototrema*. No omosternum; sternum a cartilaginous plate. Diapophyses of sacral vertebra strongly dilated. Terminal phalanges claw-shaped.

Ecuador.

This genus differs from any other of the tailless tribe in having the lower jaw furnished with teeth, which are exactly the same as those of the upper jaw. In *Hemiphractus* and *Ceratohyla* the mandibular teeth are quite different, and must rather be considered odontoids than true teeth. In *Amphodus* they are very strong and few in number. But in the present genus the teeth of the lower as well as of the upper jaw are small, elongated, closely set—in fact exactly the same as those of the upper jaw of the toothed Batrachians.

1. Amphignathodon guentheri. (Plate XXX.)

Vomerine teeth in two oblique series commencing from the inner posterior corner of the choanæ. Head much broader than long, bony, rough, the derm involved in the cranial ossification; snout extremely short, vertically truncate; canthus rostralis angular; crown deeply concave; interorbital space broader than the upper eyelid; tympanum smaller than the eye, turned backwards. Fingers slender, first a little shorter than second, the tips dilated into large disks; toes half webbed, the disks smaller than those of fingers; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin finely tubercular above, granulate on the belly and under the thighs; upper eyelid with a pointed dermal appendage; heel with a dermal spur. Olive above, the borders of the dorsal pouch black; a few whitish dots on the head and the sides of the body; a black, white-edged streak along each side of the body; upper surface of thighs whitish, with numerous black cross bars, which are broader than the interspaces between them; arms and legs with rather indistinct cross bars; beneath light greyish brown. From snout to vent 75 millim.

Ecuador.

a. ♀.	Intac.	Mr. Buckley [C.].

The following genus should perhaps enter this family:—

Grypiscus, Cope, Journ. Ac. Philad. (2) vi. 1867, p. 205.

"Mandible with a series of caducous pleurodont teeth, and a prominent elevated tooth on each side the symphysis. Prefrontal bones fully developed, in contact with each other throughout, and with fronto-parietals. Auditory apparatus well developed; tongue broad, entire, little free. Vomerine teeth; no parotoid glands.

"The mandibular teeth are obtuse, and scarcely project above the alveolar margin; their attachment appears to be the mucous membrane only, on which account they are readily scraped away.

"Xiphisternum [sternum, nobis] an emarginate cartilaginous shield. Toes webbed."

G. umbrinus, Cope, *l. c.* p. 206.—Rio Janeiro.

12. HEMIPHRACTIDÆ.

Hemiphractidæ, *Cope, Journ. Ac. Philad.* (2) vi. 1866.
Ranidæ, part., *Mivart, Proc. Zool. Soc.* 1869.

Both jaws toothed; diapophyses of sacral vertebra not dilated.

The sternal apparatus of *Hemiphractus* and *Ceratohyla* has been figured by M. J. de la Espada. The coracoids and precoracoids are parallel, and the epicoracoid cartilage is remarkable for its great width.

According to Dr. Brocchi, the vertebræ are opisthocœlian in *Hemiphractus*, and the coccyx is attached to two condyles.

The same author, having studied the structure of the mandibular teeth of *Hemiphractus*, expresses the opinion that these must be considered odontoids rather than true teeth.

Synopsis of the Genera.

Vomers and palatines toothed; tips of fingers and toes not dilated into regular disks................ 1. **Hemiphractus**, p. 451.

Vomers and palatines toothed; tips of fingers and toes dilated into regular disks .... 2. **Ceratohyla**, p. 453.

Palatines and parasphenoid toothed; tips of fingers and toes dilated into regular disks................ 3. **Amphodus**, p. 455.

1. HEMIPHRACTUS.

Hemiphractus, *Wagler, Isis,* 1828, p. 743; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 88; *Espada, Jorn. Sc. Lisb.* iii. p. 62.
Hemiphractus, sp., *Peters, Mon. Berl. Ac.* 1862, p. 145.

Pupil horizontal. Tongue entire or slightly nicked, and slightly free behind. Teeth on the vomers and palatine bones. Head large, helmet-shaped; orbit completely enclosed. Tympanum distinct. Fingers with a rudiment of web; toes webbed at the base; tips of fingers and toes not dilated into regular disks. Outer metatarsals united. Omosternum rudimentary; sternum a cartilaginous plate. Terminal phalanges simple.

South America.

1. Hemiphractus scutatus.

Rana scutata, *Spix, Spec. Nov. Test. Ran.* p. 28, pl. 4. f. 2.
Hemiphractus spixii, *Wagl. Isis*, p. 743, pl. 10. f. 1–2, *and Syst. Amph.* p. 204.
—— scutatus, *Peters, Mon. Berl. Ac.* 1862, p. 146, pl. 1.

Tongue subcircular, a little longer than broad. Anterior vomerine teeth not longer than the others. Snout twice the length of the orbit; nostrils close together, equally distant from the eye and the tip of the snout; interorbital space nearly four times broader than the space between the nostrils; hinder edge of the helmet strongly curved; the distance from one of the posterior extremities of the helmet to the other equals about twice and one third the distance from one orbit to the other; profile of the upper lip curved; tympanum much larger than the eye, a vertical oval obliquely directed forwards and upwards. Fingers short, first much longer than second; toes short, webbed at the base; subarticular tubercles scarcely prominent; a single, scarcely prominent, metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the eye. Skin of back smooth; sides and belly with large tubercles; a few scattered tubercles on the throat and breast; three rows of tubercles across the calf; a small triangular dermal flap at the tip of the snout; upper eyelid produced in a horn-like dermal appendage; a few small tubercles on the knee and on the heel. Greyish brown above; head uniform above; a black, light-edged triangular spot below the eye, confluent with a streak of same colour extending from the eye to the end of the helmet; back and sides and upper surface of thighs marbled with dark brown; arms, legs, and tarsi with narrow dark cross bars; hinder side of thighs and lower surface of tarsi blackish brown; round blackish-brown spots on the inner side of the legs; lower surfaces brown; a line on the middle of the throat and the tubercles on the belly white.

Para; Ecuador.

a. ♂?	Ecuador.	Mr. Buckley [C.].

2. Hemiphractus divaricatus.

Hemiphractus divaricatus, *Cope, Proc. Ac. Philad.* 1868, p. 114.
? Hemiphractus scutatus, *Espada, Jorn. Sc. Lisb.* iii. p. 62, *and Viaj. Pacif., Vertebr.* pl. 5. f. 1; *Brocchi, Ann. Sc. Nat.* (6) v. art. 7, pl. 16.

The frog figured by Espada and Brocchi is evidently different from the true *H. scutatus* figured by Peters; it appears to be the same as that described by Cope under the name *H. divaricatus.*

The helmet is broader, with more divergent outlines, and its hinder edge is but slightly curved; the distance between each posterior extremity of the helmet is greater if compared to the width of the interorbital space. Espada describes and figures the tongue as reniform, broader than long.

Colombia; Ecuador.

2. CERATOHYLA.

Hemiphractus, sp., *Peters, Mon. Berl. Ac.* 1862, p. 145.
Cerathyla, *Espada, Jorn. Sc. Lisb.* iii. p. 63.

Pupil horizontal. Tongue entire, slightly free behind. Teeth on the vomers and palatine bones. Head large, helmet-shaped; orbit completely enclosed. Tympanum distinct. Fingers with an indistinct rudiment of web; toes webbed at the base; tips of fingers and toes dilated into regular disks. Outer metatarsals united. Omosternum rudimentary; sternum a cartilaginous plate. Terminal phalanges claw-like.

Ecuador.

Synopsis of the Species.

I. Upper eyelid produced into a horn-like dermal appendage; snout with a long dermal appendage .... 1. *proboscidea*, p. 453.

II. Upper eyelid rounded, tubercular; snout with a short dermal appendage.

1. Tibio-tarsal articulation not reaching beyond the tip of the snout.

Tongue circular; the distance from the extremity of one of the lateral processes of the helmet to the other equals its distance from the tip of the snout .... 2. *bubalus*, p. 453.
Tongue longer than broad; hinder edge of the helmet strongly curved .... 3. *fasciata*, p. 454.
Tongue broader than long; hinder edge of the helmet slightly curved........... 4. *palmarum*, p. 455.

2. Tibio-tarsal articulation reaching beyond the tip of the snout .... 5. *braconnieri*, p. 455.

1. Ceratohyla proboscidea.

Cerathyla proboscidea, *Espada, Jorn. Sc. Lisb.* iii. p. 64, *and Viaj. Pacif., Vertebr.* pl. 5. f. 2.

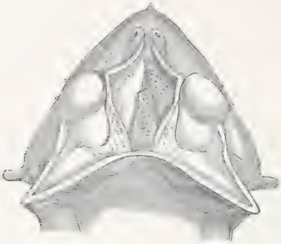
Tongue longer than broad. Snout with a long, compressed, bifid, dermal appendage; upper eyelid produced into a horn-like dermal appendage. Hinder edge of the helmet slightly curved. First finger longer than second; toes one-third webbed. Heel with a triangular dermal appendage.

Ecuador.

2. Ceratohyla bubalus.

Cerathyla bubalus, *Espada, Jorn. Sc. Lisb.* iii. p. 64, *and Viaj. Pacif., Vertebr.* pl. 5. f. 3.

Tongue circular. Anterior vomerine teeth longer than the others. Snout with a very short pointed dermal appendage; upper eyelid rounded. Lateral processes of the helmet strongly diverging; the distance from the extremity of one of these processes to the other equals its distance from the tip of the snout, or more than three times the width of the interorbital space, which is concave with prominent ridges; tympanum large, oval, entirely turned backwards. First finger longer than second; toes one-third webbed; subarticular tubercles not very prominent; a single metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin of back smooth, of belly closely, of throat sparsely, granular; a few conical tubercles on the head and limbs; a very short triangular dermal flap on the heel. Back brown; head and limbs greyish, the latter cross-barred with brown; hinder side of thighs grey, reticulated with blackish; lower surface of tarsi and soles blackish; lower surfaces dirty white, the belly and limbs reticulated with brown.


Upper view of head.

Ecuador.

a. ♀?	Canelos.	Mr. Buckley [C.].

3. Ceratohyla fasciata.

Hemiphractus fasciatus, *Peters, Mon. Berl. Ac.* 1862, p. 149, pl. 2.

Tongue longer than broad. Snout with a very short pointed dermal appendage; upper eyelid rounded. Lateral processes of the helmet slightly diverging; the distance from the extremity of one of these processes to the other equals its distance from the nostril, or not quite twice and a half the width of the interorbital space; hinder edge of the helmet strongly arched; tympanum large, oval, obliquely turned backwards. Limbs and body as in *C. bubalus.* Dark brown above, limbs cross-barred with blackish; hinder side of thighs reticulated with blackish; lower surfaces brown, white-spotted.

Ecuador.

a. ♂?	Canelos.	Mr. Buckley [C.].

4. Ceratohyla palmarum.

Cerathyla palmarum, *Espada, Jorn. Sc. Lisb.* iii. p. 64, *and Viaj. Pacif., Vertebr.* pl. 6. f. 1.

Similar to *C. fasciata*, but the tongue is broader than long, and the hinder edge of the helmet is but slightly arched.

Ecuador.

5. Ceratohyla braconnieri.

Cerathyla braconnieri, *Espada, ll. cc.* p. 64, & pl. 6. f. 2.

Resembles the two preceding species. The hind limbs are much longer, the tibio-tarsal articulation reaching beyond the tip of the snout. The shape of the helmet is intermediate between that of the two last species. Tongue circular.

Ecuador.

3. AMPHODUS.

Amphodus, *Peters, Mon. Berl. Ac.* 1872, p. 768.

Pupil horizontal? Tongue heart-shaped, slightly free behind. Teeth on the palatine bones and on the parasphenoid. Tympanum distinct. Fingers free; toes nearly free, the tips dilated into well-developed disks. Outer metatarsals united. Omosternum present.

Brazil.

1. Amphodus wuchereri.

? Hyla luteola, *Wied, Reise Bras.* i. p. 202, *and Beitr.* i. p. 535, *and Abbild.*

Amphodus wuchereri, *Peters, Mon. Berl. Ac.* 1872, p. 769, pl. 1. f. 1.

Mandibular teeth about eleven on each side, increasing in size towards the symphysis. Two large irregular transverse groups of closely-set teeth on the palatine bones; sphenoid with about five series of small teeth. Habit of a *Hylodes*. Snout short, pointed, prominent; canthus rostralis distinct though rounded; tympanum not quite half the diameter of the eye. Fingers rather short, first shorter than second; a slight web at the base of the three outer toes; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the middle of the tarsus marks the tip of the snout. Skin smooth above, granulate beneath; head slightly pitted. Chocolate-brown above; a well-defined yellow band on each side of the body, beginning from the upper eyelid, ending in a broad yellow supraanal spot; head, and back between the lateral bands, and hind limbs spotted with yellow; beneath uniform yellowish white.

Bahia.

Suborder II. AGLOSSA.

Aglossa, Phaneroglossa, part., *Wagler, Syst. Amph.*
Phrynaglosses, *Dum. & Bibr. Erp. Gén.* viii.
Aglossa haplosiphona, *Günth. Cat. Batr. Sal.*
Aglossa, *Cope, Nat. Hist. Rev.* 1865.
Aglossa, Odontaglossa, *Cope, Check-list N.-Amer. Batr. & Rept., Bull. U.S. Nat. Mus.* i. 1877.

Eustachian tubes united into a single ostium pharyngium. No tongue.

The few members of this suborder have the vertebræ opisthocœlian and deprived of ribs; the diapophyses of the third and fourth vertebræ are extremely elongate, and those of the sacral are strongly dilated and confluent with the coccyx.

In *Pipa* there are only seven presacral vertebræ.

The fronto-parietals are entirely ossified, and there are true ossa nasalia.

The sternal apparatus belongs to the arciferous type, though the epicoracoid cartilages do not overlap.

The larvæ are provided with two spiracula, one on each side of the body.

13. DACTYLETHRIDÆ.

Dactylethridæ, *Hogg, Classif. Amph., Mag. N. H.* (n. s.) iii. 1839 (*name only*); *Günth. Cat.*; *Cope, Nat. Hist. Rev.* 1865; *Mivart, Proc. Zool. Soc.* 1869.

Upper jaw toothed.

1. XENOPUS.

Xenopus, *Wagl. Isis,* 1827, p. 726, *and Syst. Amph.* p. 199.
Dactylethra, *Cuv. Règne Anim.*; *Tschudi, Batr.* p. 55; *Dum. & Bibr.* viii. p. 762; *Günth. Cat.* p. 1.
Silurana, *Gray, Ann. & Mag. N. H.* 1864, xiv. p. 215.

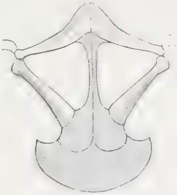
Pupil round. Palate smooth. No tympanum. Fingers free; toes broadly webbed, the first three provided with a sharply-pointed nail. Outer metatarsals separated. Coracoids and precoracoids subequal, strongly divergent, connected by a double, not overlapping, cartilage; no omosternum; sternum a cartilaginous plate. Diapophyses of sacral vertebra very strongly dilated. Terminal phalanges pointed.

Tropical Africa.

1. Xenopus lævis.

Dactylethra lævis, *Günth. Cat.* p. 2.
Bufo lævis, *Daud. Rain.* p. 85, pl. 30. f. 1, *and Rept.* viii. p. 171.
Pipa lævis, *Merr. Tent.* p. 180.
—— bufonia, *Merr. l. c.*
Leptopus oxydactylus, *Mayer, Anal.* p. 34.

Xenopus boiei, *Wagl. Isis,* 1827, p. 726, *and Syst. Amph.* p. 199.
Dactylethra capensis, *Cuv. R. A.*; *Dum. & Bibr.* p. 765, pl. 92. f. 1; *A. Dum. Arch. Mus.* x. pl. 18. f. 6; *Mansell Veale, Ann. & Mag. N. H.* (3) xvii. p. 391.
—— boiei, *Tschudi, Batr.* p. 90.
Xenopus lævis, *Steindachn. Novara, Amph.* p. 4.
Dactylethra lævis, *Blanf. Observ. Zool. Geol. Abyss.* p. 459.



Sternal apparatus.

Head small; snout short, rounded, without canthus rostralis; eyes and nostrils turned upwards; former small, their diameter equalling the distance between their front border and the nostril; upper eyelid reduced to a mere fold of the skin; a very short tentacle below the eye. Fingers very slender, acutely pointed, subequal in size; toes strong, depressed, pointed, very broadly webbed, the three inner furnished with black corneous sheaths imbedding the claws; no claw-like metatarsal spur; no subarticular tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the eye in females, the tip of the snout in males. Skin smooth, with more or less distinct tube-like lines round the body. Dark brown above; whitish beneath, immaculate or spotted with brown. The females distinguished in having three dermal flaps closing the vent.

Tropical Africa.

a. Yg.	Senafe, Abyssinia.	W. T. Blanford, Esq. [P.].
b. ♀.	Port Natal.	Rev. H. Calloway [P.].
c. ♀.	Port Natal.	T. Ayres, Esq. [C.].
d. Larvæ, many spec.	Kaffraria.	F. P. M. Weale, Esq. [P.].
e. ♂.	King-William's Town.	H. Trevelyan, Esq. [P.].
f–g. ♀.	Cape.	The Medical Officers of the Chatham Mus. [P.].
h. ♂.	Cape.	Sir A. Smith [P.].
i. Ad., stuffed.	Cape.	
k. ♀.	Orange River.	Dr. Kannemeyer [P.].
l–m. ♂ ♀.	W. Africa.	Dr. Welwitsch [P.].

2. **Xenopus muelleri.**

Dactylethra müller, *Günth. Cat.* p. 2.
Dactylethra mülleri, *Peters, Mon. Berl. Ac.* 1844, p. 37, *and Arch. f. Naturg.* 1855, p. 58.
Xenopus mülleri, *Peters, Mon. Berl. Ac.* 1875, p. 201.

Differs from *X. lævis* in the longer tentacle below the eye (this tentacle measuring about the diameter of the eye), and the presence of a sharp claw at the base of the first toe. Hind limb longer, the tarso-metatarsal articulation marking the tip of the snout (♀) or beyond. Size smaller.

Tropical Africa.

a–c. ♀ & hgr.	Zanzibar.	Sir J. Kirk [C.].
d. ♀.	Benguella.	Prof. Barboza du Bocage [P.].
e–f. Hgr.	W. Africa.	Mr. Fraser [C.].
g. Hgr.	W. Africa.	

3. Xenopus calcaratus.

Dactylethra mülleri, *Hallow. Proc. Ac. Nat. Sc. Philad.* 1857, p. 65; *A. Dum. Arch. Mus.* x. p. 231, pl. 18. f. 5.
Silurana tropicalis, *Gray, Ann. & Mag. N. H.* xiv. 1864, p. 315, *and Proc. Zool. Soc.* 1864, p. 458.
Xenopus mülleri, *Steindachn. Novara, Amph.* p. 4.
—— calcaratus, *Buchh. & Peters, Mon. Berl. Ac.* 1875, p. 200.

Well distinguished from the two preceding by the smaller head and extremely minute eyes. A much developed metatarsal claw. Subocular tentacle short. Tarso-metatarsal articulation marking the eye, or not quite so far. Size small.

West Africa.

a–d. ♂ ♀.	——?	Stevens.
e–h. Larvæ.	Lagos.	T. Moore, Esq. [P.]. (Types of *Silurana tropicalis*.)

14. PIPIDÆ.

Astrodactylidæ, *Hogg, Classif. Amph., Mag. N. H.* (n. s.) iii. 1839 (*name only*).
Pipidæ, *Günth. Cat.*; *Cope, Nat. Hist. Rev.* 1865; *Mivart, Proc. Zool. Soc.* 1869.

Teeth none.

1. PIPA.

Pipa, *Laur. Syn. Rept.* p. 25; *Merr. Tent.* p. 179; *Cuv. Règne Anim.*; *Dum. & Bibr.* viii. p. 767; *Günth. Cat.* p. 2.
Asterodactylus, *Wagl. Syst. Amph.* p. 199; *Tschudi, Batr.* p. 89.
Leptopus, sp., *Mayer, Anal.* p. 34.

Pupil round. Palate smooth. No tympanum. Fingers free, ending in four appendages; toes very broadly webbed, pointed. Outer metatarsals separated. Female with pouches in the back. Coracoids and precoracoids strongly divergent, former much dilated, connected by a broad double, not overlapping, cartilage; omosternum rudimentary; sternum a large cartilaginous plate. Diapophyses of sacral vertebra very strongly dilated. Terminal phalanges pointed.

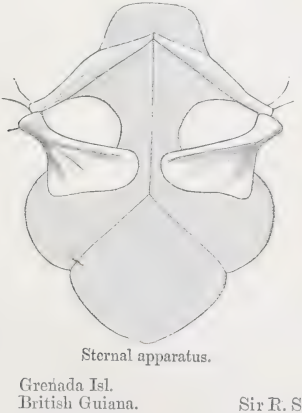
Tropical America.

1. Pipa americana.

Pipa americana, *Günth. Cat.* p. 3.
Seba, i. 77. 1–4; *Merian, Ins. Surin.* t. 59.
Rana pipa, *Linn. Mus. Ad. Frid.* p. 121, *and S. N.* p. 354; *Shaw, Zool.* iii. p. 167, pls. 50 & 51; *Blumenb. Abbild.* pl. 36; *Breyer, Observ. Anat. Diss. Præs. Rudolphi, Berl.* 1811; *Mayer, Nova Acta,* 1825, p. 527, pl. 49.
Pipa americana, *Laur. Syn. Rept.* p. 25; *Cuv. R. A.*; *Dum. & Bibr.* p. 773, pl. 92. f. 2.
Rana dorsigera, *Schneid. Hist. Amph.* p. 121, pls. 1 & 2.
Bufo dorsiger, *Daud. Rain.* p. 85, *and Rept.* viii. p. 172.
Pipa tedo, *Merr. Tent.* p. 179.
Pipa curucuru, *Spix, Spec. Nov. Test. Ran.* pl. 22. f. 1 & 2.
Leptopus asterodactylus, *Mayer, Anal.* p. 34.
Pipa dorsigera, *Gravenh. Delic.* p. 70.
Asterodactylus pipa, *Wagl. Syst. Amph.* p. 199; *Tschudi, Batr.* p. 89.

Head extremely depressed, triangular; eye minute; one or two short tentacles on the upper lip, in front of the eye; a large dermal flap at the angle of the mouth, sometimes another at the tip of the snout. Fingers very slender, subequal in size; toes very broadly webbed, third and fourth nearly equal; no subarticular tubercles; a blunt inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye or not so far. Skin covered with small tubercles. Olive-brown or blackish above; beneath lighter, sometimes white-spotted, or with a black stripe along the middle of the belly.

Guianas; Brazil.



Sternal apparatus.

a. ♂.	Grenada Isl.	
b. ♂.	British Guiana.	Sir R. Schomburgk [P.].
c, d, e. ♂ ♀.	Surinam.	
f. ♀.	Tropical America.	Sir A. Smith [P.].
g, h. ♀.	Tropical America.	
i. Skeleton.	——?	Mr. Damon.

ADDENDA.

Page 20. **Rana kuhlii.**

Add :—

g–h. ♂ ♀. Tenasserim. Col. Beddome [C.].

Page 25. **Rana macrodon.**

Add :—

r–s. ♀. Tenasserim. Col. Beddome [C.].

Page 25. **Rana modesta.**

Add :—

h–m. Hgr. Tenasserim. Col. Beddome [C.].

Referred with some doubt to this species, perhaps the young of *Rana macrodon.*

Page 33. **Rana dobsonii.**

Add :—

b. ♀. S. Canara. Col. Beddome [C.].

This specimen has a narrow light vertebral line.

Page 53. **Rana mascareniensis.**

Add :—

β–γ. ♀. Ankafana, Betsileo. Rev. Deans Cowan [C.].

Page 55. Add two new species :—

73 *a.* **Rana betsileana.**

Vomerine teeth in two slightly oblique groups just behind the level of the choanæ. Head moderate; snout subacute; canthus rostralis distinct; loreal region concave; interorbital space as broad as the upper eyelid; tympanum distinct, about two thirds the diameter of the eye. Fingers and toes moderate, the tips dilated into very small disks; first and second fingers equal; toes half webbed; subarticular tubercles moderate; a small inner metatarsal tubercle; no outer tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches to, or nearly to, the tip of the snout. Back with scarcely prominent, short glandular longitudinal folds; a glandular lateral fold; lower surfaces smooth. Brown above, with rather large blackish spots; a triangular or chevron-shaped blackish marking between the eyes; generally a light spot on the tip of the snout; sometimes a light vertebral stripe; hind limbs regularly cross-barred, broader bars generally alternating with narrower ones; lower surfaces, and sometimes also sides of the body, dirty white; gular and thoracic regions mottled with brown. Male with two internal vocal sacs. From snout to vent 34 millim.

Madagascar.

a. Several spec.: ♂, ♀, & hgr.	East Betsileo.	Rev. Deans Cowan [C.]
b–f. ♂, ♀, & hgr.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].
g. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

73*b*. Rana curta.

Vomerine teeth in two oblique groups behind the level of the choanæ. Head moderate; snout rounded; canthus rostralis obtuse; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum distinct, half or three fifths the diameter of the eye. Fingers and toes moderate, the tips dilated into very small disks; first and second fingers equal; toes three fourths webbed; subarticular tubercles rather small; a small inner metatarsal tubercle; no outer tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches the eye. Back with very indistinct flat warts; lower surfaces smooth. Olive-brown above, with rather indistinct darker spots; a dark triangular spot between the eyes; a dark temporal spot; hind limbs with dark cross bars; beneath dirty white, uniform or clouded with brown. Male with two internal vocal sacs. From snout to vent 39 millim.

Madagascar.

a–e. ♂, ♀, hgr., & yg.	East Betsileo.	Rev. Deans Cowan [C.].
f–g. ♀.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

Page 56. Rana beddomii.

Add:—

t–u. ♀ & hgr.	Malabar.	Col. Beddome [C.].

The adult female is larger than any specimen yet received, measuring 67 millim. from snout to vent; it is beautiful uniform pink above, the markings on the back and limbs being absent. The half-grown specimen is purplish pink, with the ordinary dark markings.

Page 58. Rana diplosticta.

Add:—

g. ♀.	Anamallays.	Col. Beddome [C.].

Page 58. Add a new species:—

77 *a*. **Rana phrynoderma.**

Vomerine teeth in two slightly oblique oval groups between the choanæ. Tongue with a free, pointed, conical papilla in the middle. Head moderate; snout rounded, with indistinct canthus rostralis; interorbital space narrower than the upper eyelid; tympanum rather indistinct, about two thirds the diameter of the eye. Fingers and toes rather short, the tips dilated into small disks; first finger not extending as far as second; toes one-fourth webbed; subarticular tubercles well developed; a small, oval, inner metatarsal tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Upper parts covered with warts of different sizes and short glandular folds. Dark greyish brown above, with obsolete darker spots; limbs with regular cross bars; beneath brown, dotted with whitish. From snout to vent 35 millim.

South India.

a–b. Hgr.	Anamallays.	Col. Beddome [C.].

Page 64. **Rana temporalis.**

Add:—

p–q. ♂ ♀.	Malabar.	Col. Beddome [C.].

Page 67. **Rana inguinalis.**

Add:—

b–c. ♀.	East Betsileo.	Rev. Deans Cowan [C.].
d. ♀.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

The hinder side of the thighs is black, elegantly spotted with white; upper parts sometimes purplish pink; a very narrow vertebral line may be present.

Page 68. **Rana granulata.**

For "Fingers slender, first longer than second," read "Fingers slender, first shorter than second."

Page 68. Add three species:—

96*a*. **Rana ulcerosa.**

Limnodytes ulcerosus, *Boettger*, *Zool. Anz.* 1880, p. 282, and *Abh. Senck. Ges.* xii. p. 70, pl. iv. f. 17.

Vomerine teeth in two small groups behind the level of the choanæ. Habit stout. Head moderate; snout obtuse; canthus rostralis moderately marked; loreal region distinctly concave; tympanum of male more than two thirds, of female more than half the size of the eye. First and second fingers equal; toes two-thirds or three-fourths webbed; tips of fingers and toes dilated into small disks; subarticular tubercles moderately prominent; a single metatarsal tubercle. Hind limb short. Back with more or less distinct, irregular, longitudinal warts; a fold from the eye to the shoulder; lower surfaces smooth, except the hinder part of the belly and the thighs, which are granulate; a circular flat gland below each thigh on its inner side; this gland perforated in the male. Dark grey above, with or without darker markings, the most constant being a cross band between the eyes and cross bands across the hind limbs; sometimes a light vertebral line; lower surfaces dirty white, closely marbled and dotted with black; lower lip tessellated with black and white.

Nossi Bé, Madagascar.

96 *b*. Rana femoralis.

Vomerine teeth in two small, rather widely separate groups behind the level of the choanæ. Head moderate; snout subtriangular, truncate; canthus rostralis angular; loreal region nearly vertical, distinctly concave; interorbital space as broad as the upper eyelid; tympanum distinct, two thirds or three fourths the diameter of the eye. Fingers moderate, first not extending as far as second; toes moderate, three-fourths webbed; tips of fingers and toes dilated into small, regular disks; subarticular tubercles small; a small inner metatarsal tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches to between the eye and the tip of the snout. Back with more or less distinct, flat smooth warts; a fold above the tympanum; lower surfaces smooth, except the hinder part of the belly and the thighs which are granulate; a circular flat gland with a more or less distinct median depression below each thigh on its inner side. Dark brown or blackish above; a black temporal spot; loins marbled with black and bright yellow; axillæ sometimes yellow; hind limbs with rather indistinct darker cross bars; hinder side of thighs black, generally dotted or marbled with yellow; lower surfaces brown, dotted and marbled with blackish. Male with two internal vocal sacs. From snout to vent 50 millim.

Madagascar.

a–d. ♂ & hgr.	East Betsileo.	Rev. Deans Cowan [C.].

96 *c*. Rana cowanii.

Vomerine teeth in two small oblique groups behind the level of the choanæ. Head moderate; snout subtriangular, rather prominent; canthus rostralis distinct; loreal region nearly vertical; interorbital space as broad as the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers moderate, first shorter than second; toes rather short, entirely webbed; tips of fingers dilated into large disks, the diameter of which equals one third that of the eye; tips of toes dilated into smaller, but well-developed disks;

subarticular tubercles small; a small, indistinct, inner metatarsal tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above and beneath, sides glandular; a fold above the tympanum. Blackish brown above; two rather indistinct broad bars across the back, a triangular spot between the eye, and cross bars on the limbs black; sometimes minutely punctulated with whitish; sides of body and of hind limbs with bright yellow spots; lower surfaces brown, spotted or marbled with lighter. Male with two internal vocal sacs. From snout to vent 42 millim.

Madagascar.

a–b. ♂.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].
c. ♂.	East Betsileo.	Rev. Deans Cowan [C.].

Page 71. Add a new species:—

101 *a*. Rana latopalmata.

Vomerine teeth in two short transverse, slightly oblique series between the choanæ. Head moderate, rather depressed; snout subacuminate, with angular canthus rostralis and deeply concave loreal region; interorbital space slightly narrower than the upper eyelid; eye large; tympanum distinct, two fifths the diameter of the eye. Fingers rather slender, first a little shorter than second, the tips dilated into large disks; toes very broadly webbed, the disks (which are smaller than those of the fingers) partly included in the membrane; subarticular tubercles small; two very small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin finely shagreened above, and with scattered small smooth warts. Olive-brown above, closely spotted with darker on the head and back; limbs with dark cross bars; hinder side of thighs finely blackish-marbled on a light ground; beneath white, the throat sometimes brown-spotted. From snout to vent 52 millim.

Tenasserim.

a-f. Hgr. & yg.	Tenasserim.	Col. Beddome [C.].

Page 73. Add two new species:—

107 *a*. Rana plicifera.

Vomerine teeth in two small oblique groups behind the level of the choanæ. Head moderate; snout pointed; canthus rostralis angular; loreal region concave; interorbital space as broad as the upper eyelid; tympanum half the diameter of the eye. Fingers and toes rather slender, the tips dilated into small, regular disks; first finger a little shorter than second; toes somewhat more than half webbed; subarticular tubercles moderate; inner metatarsal tubercle small; no outer tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth above; two narrow glandular folds on scapular region, directed inwards, each commencing from the upper eyelid; another fold on each side of the back, commencing where the other disappears, ending on sacral region; a fold from the eye to the shoulder; belly granulate. Dark brown above, a cross streak between the eyes and the glandular folds lighter; a light vertical streak on the tip of the snout, and in one specimen (*d*) a large yellowish spot on loreal region; limbs with regular dark cross bars; hinder side of thighs brown and whitish marbled; in one specimen the space between the anterior glandular folds light-coloured; beneath whitish; throat brown, whitish dotted. Male with two vocal sacs, conspicuous externally by a strong fold on each side of the throat. From snout to vent 38 millim.

Madagascar.

a–c, d. ♂, ♀, & hgr.	East Betsileo.	Rev. Deans Cowan [C.].

107*b*. Rana aspera.

Vomerine teeth in two small groups behind the level of the choanæ. Head moderate; snout pointed; canthus rostralis angular; loreal region very elevated, concave; interorbital space narrower than the upper eyelid; tympanum two thirds or three fourths the diameter of the eye. Fingers and toes slender, the tips dilated into small regular disks; first and second fingers equal; toes half webbed; subarticular tubercles well developed; inner metatarsal tubercle small, prominent; outer metatarsal tubercle very small or absent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper surfaces, especially head and back, with prominent glandular folds and tubercles; upper eyelid with conical tubercles; a conical dermal spur just below the tibio-tarsal articulation; belly granulate. Olive or pinkish above, spotted with blackish; limbs with blackish cross bars; lips with vertical black spots; sometimes a narrow vertebral line or broad stripe whitish; in one specimen, a large, transversely oval whitish spot between scapulæ; beneath whitish, throat and breast marbled with brown. Male with two vocal sacs, conspicuous externally by a strong fold on each side of the throat, which is blackish. From snout to vent 30 millim.

Madagascar.

a–d, e–g. ♂ ♀.	East Betsileo.	Rev. Deans Cowan [C.].

Page 76. Rhacophorus goudoti.

Add:—

e-f, g–h. ♂ ♀.	East Betsileo.	Rev. Deans Cowan [C.].

In two male specimens (*g–h*), the lower surfaces are bright yellow, marbled with grey.

Page 76. Add a new species:—

1 *a*. Rhacophorus rhodoscelis.

Vomerine teeth in two short transverse series behind the level of the choanæ. Snout rounded; canthus rostralis distinct; loreal region very slightly concave; nostril nearer the eye than the tip of the snout; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers nearly one-third webbed; toes two-thirds webbed; disks of fingers and toes smaller than the tympanum; subarticular tubercles little developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above, granulate on the belly and under the thighs. Light brown or yellowish above, dotted or reticulated with blackish; a blackish streak on canthus rostralis and upper lip; temporal region blackish; hind limbs with more or less distinct dark cross bars; sides of thighs, lower surface of tibiæ, inner side of tarsi, three inner toes, and membrane between the latter and the two outer fingers crimson; the same colour extends sometimes on the flanks; beneath white, marbled with blackish, especially on the throat; in one specimen the belly is marbled with crimson. Male with an internal vocal sac. From snout to vent 38 millim.

Madagascar.

a–e. ♂, ♀, & hgr.	East Betsileo.	Rev. Deans Cowan [C.].
f. ♀.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

Page 77. Add four species:—

3 *a*. Rhacophorus femoralis.

Vomerine teeth in two small groups close together behind the level of the choanæ. Snout short, rounded; canthus rostralis distinct; loreal region slightly concave; nostril halfway between the eye and the tip of the snout; interorbital space a little broader than the upper eyelid; tympanum small, indistinct. Fingers webbed at the base; toes three-fourths webbed; disks moderate; subarticular tubercles well developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the centre of the eye. Skin smooth above, granulate on the belly and under the thighs. Grey above, dotted with darker and lighter; upper lip white-spotted; flanks black and white marbled; humerus black above, with a white longitudinal streak; another white streak along the femur; latter uniform black behind, white with vertical black spots in front; beneath dirty white, immaculate. From snout to vent 27 millim.

Madagascar.

a. Hgr.	East Betsileo.	Rev. Deans Cowan [C.].

3 *b*. Rhacophorus boettgeri.

Hylambates microtympanum, *Boettger, Zool. Anz.* 1881, p. 47, and *Abh. Ver. Brem.* vii. p. 185, and *Abh. Senckenb. Ges.* xii. p. 514.

Vomerine teeth in two small groups behind the level of the choanæ. Snout rounded; canthus rostralis rounded; loreal region slightly concave; nostril halfway between the eye and the tip of the snout; interorbital space broader than the upper eyelid; tympanum small, indistinct. Fingers webbed at the base; toes two-thirds webbed; disks very small; subarticular tubercles not much developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the posterior border of the eye. Skin smooth above, granulate beneath. Green or greyish-olive above, with small insuliform, light-edged reddish-brown spots or ocelli; a brown, above light-edged streak from the tip of the snout through the eye along the side of the body; latter brown, white-spotted; a brown light-edged line along both sides of the limbs; hinder side of thighs brown, white-spotted; beneath dirty white or brownish, with or without darker marblings on the throat and breast. Male with an internal vocal sac.

Madagascar.

a–b, c–d. ♂ ♀.	East Betsileo,	Rev. Deans Cowan [C.].
e–f. ♀.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

3 *c*. Rhacophorus pulcher.

Vomerine teeth in two small oblique groups, commencing from the inner hinder edge of the choanæ. Head depressed; snout pointed; canthus rostralis angular; loreal region nearly vertical; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum moderately distinct, one third the diameter of the eye. Fingers webbed at the base; toes not quite half webbed; disks as large as the tympanum; subarticular tubercles not much developed; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above and beneath. Light olive above, punctate with vinaceous red; a streak of the same colour from the tip of the snout through the eye to the middle of the side, where it ends in a large spot; lower surfaces not coloured. The skeleton bright green. From snout to vent 25 millim.

Madagascar.

a–e. Yg.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

3 *d*. Rhacophorus depressiceps.

Vomerine teeth in two slightly oblique groups behind the level of the choanæ. Head much depressed; snout subacuminate; canthus rostralis angular; loreal region slightly concave, nearly vertical;

nostril a little nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers long, slightly webbed at the base; toes long, half webbed; disks nearly as large as the tympanum; subarticular tubercles rather small; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth; belly slightly granulate. Olive above, snout lighter; loreal and temporal regions blackish; sides of body marbled with dark brown; hind limbs indistinctly cross-barred; greyish white beneath, spotted with dark brown. Male with internal vocal sacs. From snout to vent 39 millim.

Madagascar.

a–b. ♂.	East Betsileo.	Rev. Deans Cowan [C.].
c–d. ♂.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

Page 86. Add a new species :—

22 *a*. **Rhacophorus luteus.**

Vomerine teeth in two short transverse series behind the level of the choanæ. Snout rounded; canthus rostralis rather indistinct; loreal region not concave; nostril nearer the eye than the tip of the snout; interorbital space broader than the upper eyelid; tympanum indistinct, about half the diameter of the eye. Outer fingers half webbed, toes three-fourths webbed; disks of fingers about half the diameter of the eye, of toes rather smaller; subarticular tubercles moderate; a small, conical, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the front of the eye. Skin smooth above, granulate beneath; a short transverse flap of skin on the tibio-tarsal articulation. Upper surfaces bright yellow; lower surfaces and sides of limbs not coloured; sides of body white-dotted; a white line along the outer side of forearm and fourth finger, on tibio-tarsal flap, and along outer side of tarsus and fifth toe. Male with an internal vocal sac. From snout to vent 47 millim.

Madagascar.

a–b. ♂ & hgr.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

Page 91. Add a new species :—

30 *a*. **Rhacophorus beddomii.**

Vomerine teeth in two oblique series between, and extending backwards a little beyond, the choanæ. Snout subtriangular; canthus rostralis distinct; loreal region slightly concave; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum two fifths the width of the eye. Fingers and toes webbed to the disks, which are as large as the tympanum; subarticular tubercles moderate; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Upper surfaces with very small smooth tubercles; a fold from the eye to the shoulder; a slight fringe along the forearm and tarsus; a transverse flap above the vent; beneath granulate. Light reddish brown above, indistinctly variegated with grey; hind limbs rather indistinctly cross-barred with grey. Male with an internal vocal sac. From snout to vent 49 millim.

Malabar.

a. ♂. Calcad Hills, Tinnevelly (3000 feet). Col. Beddome [C.].

Page 96. **Ixalus fuscus.**

Add :—

p–q. ♀. Malabar. Col. Beddome [C.].

Upper surfaces magenta-red.

Page 96. Add a new species :—

2 *a.* Ixalus silvaticus.

Snout rounded or subacuminate, slightly prominent, hardly as long as the orbital diameter; canthus rostralis angular; loreal region flat, vertical; nostril halfway between the eye and the tip of the snout; interorbital space a little broader than the upper eyelid; tympanum small, indistinct. Fingers free, toes one-third or two-fifths webbed, the membrane extending as a narrow fringe along their sides; disks of fingers and toes small; subarticular tubercles small; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the posterior border or the centre of the eye. Skin smooth above and beneath; a narrow glandular lateral fold, commencing some distance from the eye; a fold from the eye to the shoulder. Brown above, with rather indistinct darker markings, the most constant being a broad chevron between the eyes; sides of head blackish brown; limbs cross-barred; hinder side of thighs blackish brown; groin and front of thighs frequently rose-coloured; brown beneath, throat and chest dotted, belly and lower surface of hind limbs marbled with whitish. Male with two internal vocal sacs. From snout to vent 27 millim.

Malabar.

a. Several spec. Malabar. Col. Beddome [C.].

Page 102. Add a new species :—

14 *a.* Ixalus pulcher.

Snout slightly pointed, a little shorter than the orbital diameter; canthus rostralis distinct; loreal region very slightly concave; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum small, very indistinct in non-desiccated specimens. Fingers with a rudiment of web, toes half webbed; disks and subarticular tubercles moderate; a very small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or between the latter and the eye. Skin smooth above, granulate beneath; a fold from the eye to the shoulder. Blue-green or purplish above, generally uniform, sometimes with small black spots; a purplish-brown streak on canthus rostralis and generally on postocular fold; loreal region white, uniform or with purplish-brown spots, or purplish brown, dotted or not with whitish; arms, and generally forearms, colourless; thighs with a stripe of pigment on their upper surface. Male with an external subgular vocal sac, situated on the thoracic region. From snout to vent 23 millim.

S. India.

a. Many spec.: ♂, ♀, & hgr.	Manantoddy.	Col. Beddome [C.].

Page 114. Add a new genus:—

8 *a*. NANNOBATRACHUS.

Pupil erect. Tongue free and nicked behind. Vomerine teeth. Tympanum hidden. Fingers and toes free, the tips dilated into small disks. Outer metatarsals separated by a groove. Omosternum and sternum slender, cartilaginous. Terminal phalanges bifurcate.

India.

Closely allied to *Nyctibatrachus*.

1. Nannobatrachus beddomii.

Vomerine teeth in two oblique oval groups behind the level of the choanæ. Habit stout. Snout short, rounded, without canthus rostralis; interorbital space narrow, much narrower than the upper eyelid. Fingers moderate, first shorter than second; toes moderate, with a slight rudiment of web; disks and subarticular tubercles very small; a very indistinct inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout, or not quite so far. Skin quite smooth. Brown above, variegated with darker; generally a more or less defined light band on each side of the back; limbs cross-barred; whitish beneath, immaculate. From snout to vent 20 millim.

Malabar.

a–b. ♂.	Malabar.	Col. Beddome [C.].
c. Several spec., ♂ ♀.	Tinnevelly.	Col. Beddome [C.].

Page 120. Add a species :—

1 *a*. **Rappia betsileo.**

Eucnemis betsileo, *Grandid. Ann. Sc. Nat.* (5) xv. 1872, art. 20, p. 10.

Head very small; snout rounded, as long as the orbital diameter; tympanum hidden. Fingers half webbed; toes three-fourths webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or a little beyond. Skin smooth, granulate on the belly and under the thighs; no strong fold across the chest. Greenish or blackish above; a bright yellow, beneath black-edged, band from the tip of the snout through the eye along each side of the body; thighs, hands, and feet bright yellow.

Closely allied to *R. horstockii*, but differing in the smaller head. Specimen *e* of the latter species should be referred to *R. betsileo*.

Madagascar.

a. ♀.	S.E. Betsileo.	
b–d, *e–f*. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

Page 129. **Megalixalus madagascariensis.**

Add :—

s–t. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

Sides of head and body, fore limbs, thighs above and beneath, and feet bright yellow. Doubtless the *Eucnemis antanosi* of Grandidier.

Page 137. **Hylambates microtympanum**

is to be referred to the genus *Rhacophorus*.

Page 142. Add a new species :—

4. **Mantella cowanii.**

Snout subtriangular, a little longer than the diameter of the eye; canthus rostralis distinct; loreal region vertical; interorbital space broader than the upper eyelid; tympanum distinct, two fifths the diameter of the eye. Fingers and toes moderate, the tips dilated into very small disks; subarticular tubercles distinct; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye, or a little beyond. Skin smooth, except on the flanks and the lower surface of the thighs, which are granulate; a slight fold from the eye to the shoulder. Black; a large spot at the base of the limbs, extending on the humerus and femur, and round spots on the throat, belly, and lower surface of femora yellow; a broad band encircling tibia and another encircling tarsus deep orange. From snout to vent 26 millim.

Madagascar.

a-b. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

Page 158. CALOPHRYNUS.

Third line of generic diagnosis, for "Tympanum distinct" read "Tympanum distinct or hidden."

Add a new species :—

3. Calophrynus madagascariensis.

Snout short, rounded; canthus rostralis obtuse; loreal region oblique, slightly concave; interorbital space as broad as the upper eyelid; tympanum hidden. Fingers moderate, pointed, first a little shorter than second; toes moderate, pointed, one-third webbed; subarticular tubercles very indistinct; inner metatarsal tubercle large, shovel-shaped; no outer tubercle. Limbs very short; the hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the shoulder. Skin smooth above, slightly granulate beneath. Olive above, with large insuliform dark, light-edged spots, which themselves include numerous small light insuliform spots; beneath white, with scattered blackish spots. From snout to vent 55 millim.

Madagascar.

a. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

Page 158. Add a new genus :—

6*a*. SCAPHIOPHRYNE.

Pupil horizontal. Tongue elliptic, entire, and free behind. Vomerine teeth none. A transverse dermal ridge in front of the œsophagus, and another curved one in front of this. No tympanic disk. Fingers free, the tips dilated into large disks; toes webbed at the base, the tips not dilated. Outer metatarsals united. Precoracoids present, weak; no omosternum; sternum cartilaginous. Diapophyses of sacral vertebra feebly dilated. Terminal phalanges of fingers T-shaped, of toes simple.

Madagascar.

1. Scaphiophryne marmorata.

Head small; snout very short, truncate; loreal region vertical; interorbital space as broad as the upper eyelid. First finger shorter than second; disks heart-shaped; toes slightly webbed at the base; metatarsal tubercles feebly developed; a large, shovel-shaped metatarsal tubercle; a small tarsal tubercle below the tibio-tarsal articulation. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the front of the eye. Upper surfaces with smooth warts; a fold from the eye to the shoulder; belly and lower surface of thighs granulate. Green above, marbled with black; a hourglass-shaped black spot beginning between the eyes; limbs with broad black cross bars; digital disks pink above; lower surfaces black, marbled with yellow. From snout to vent 30 millim.

Madagascar.

a. Hgr.?	East Betsileo.	Rev. Deans Cowan [C.].

Page 180.

The synopsis of the genera of the family *Dyscophidæ* is modified as follows:—

I. Pupil vertical.

Vomerine teeth in a long transverse series; precoracoids present; sternum very large; tips of fingers and toes not dilated.
1. **Dyscophus**, p. 180.

Vomerine teeth in a long transverse series; precoracoids present; sternum small; tips of fingers and toes not dilated.
2. **Calluella**, p. 181.

Vomerine teeth in a long transverse series; no precoracoids; sternum small; tips of fingers and toes dilated.
3. **Plethodontohyla**, pp. 182, 473.

II. Pupil horizontal.

Vomerine teeth in two small groups; precoracoids present; sternum small; tips of fingers and toes dilated.
4. **Platypelis**, p. 474.

Vomerine teeth in a single, median group; tips of fingers and toes dilated .... 5. **Cophyla**, p. 475.

Page 182. COPHYLA.

The diagnosis given does not apply to the genus so named by Dr. Boettger, but to a new genus:—

3. PLETHODONTOHYLA.

The type being:—

1. Plethodontohyla notosticta.

Two new species are added:—

2. Plethodontohyla inguinalis.

Snout short, rather pointed; canthus rostralis angular; interorbital space broader than the upper eyelid; tympanum slightly distinct, about two fifths the diameter of the eye. Fingers and toes rather slender, the tips dilated into small triangular disks; first finger a little shorter than second; subarticular tubercles of fingers slightly developed, of toes indistinct; metatarsal tubercle indistinct. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches far beyond the tip of the snout. Skin everywhere smooth; a narrow glandular fold from the eye to the side of the body. Dark olive above; glandular fold and a cross band between the eyes lighter; a black, light-edged spot in the inguinal region; hind limbs with black cross bands; sides of thighs and lower surface of tibiæ dotted with whitish; brown beneath, with darker vermiculations. From snout to vent 60 millim.

Madagascar.

a. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

3. Plethodontohyla brevipes.

Series of palatine teeth forming a 〜. Snout short, rounded; canthus rostralis distinct; interorbital space broader than the upper eyelid; tympanum slightly distinct, two thirds the diameter of the eye. Fingers and toes short, the tips simply swollen; first finger shorter than second; subarticular tubercles and metatarsal tubercle very indistinct. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the posterior border of the eye. Skin shagreened; a fold from the eye to the shoulder. Uniform dark brown above; throat brown; belly dirty white, variegated with brown. From snout to vent 34 millim.

Madagascar.

a. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

Add a new genus:—

4. PLATYPELIS.

Pupil horizontal. Tongue large, oval, entire, and free behind. Vomerine teeth in two small groups close together behind the level of the choanæ. Tympanum slightly distinct. Fingers with a rudiment of web; toes webbed at the base, the tips dilated into regular disks. Outer metatarsals united. Coracoids strong; precoracoids weak, resting upon coracoids; no omosternum; sternum a small cartilaginous plate. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges T-shaped.

Madagascar.

1. Platypelis cowanii.

Head depressed; snout very short, rounded; canthus rostralis scarcely distinct; interorbital space as broad as the upper eyelid; tympanum nearly as large as the eye. Fingers short, first much shorter than second, slightly webbed at the base, the tips dilated into large, truncated disks; toes short, one-fourth webbed, the disks smaller than those of the fingers; subarticular tubercles feeble; a very indistinct inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the centre of the eye. Skin smooth above and beneath.

Olive above, marbled with darker: tibia and tarsus regularly crossbarred; lower surfaces dirty white. From snout to vent 29 millim.

Madagascar.

a. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

The genus *Cophyla* is characterized as follows:—

5. COPHYLA.

Cophyla, *Boettger, Zool. Anz.* 1880, p. 281, and *Abh. Senck. Ges.* xii. p. 516.

Pupil horizontal. Tongue large, entire, and free behind. Vomerine teeth in a single median group behind the level of the choanæ. Tympanum hidden. Fingers free; toes with a rudiment of web, the tips dilated into large disks, which are divided on their upper surface by a longitudinal groove. Osteological characters unknown.

Madagascar.

1. Cophyla phyllodactyla, p. 183.

Cophyla phyllodactyla, *Boettg. l. c.* pl. v. f. 19.

Nossi Bé.

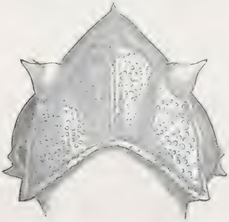
Page 299.

Bufo benguelensis.

On comparison of this species with a specimen of *Bufo funereus* (Bocage, Jorn. Sc. Lisb. 1866, p. 77) sent by Prof. Bocage to the British Museum, we find that they are identical; therefore the latter name has to be adopted.

Page 452.

Hemiphractus scutatus.



The upper view of the head of this frog has been inadvertently omitted.

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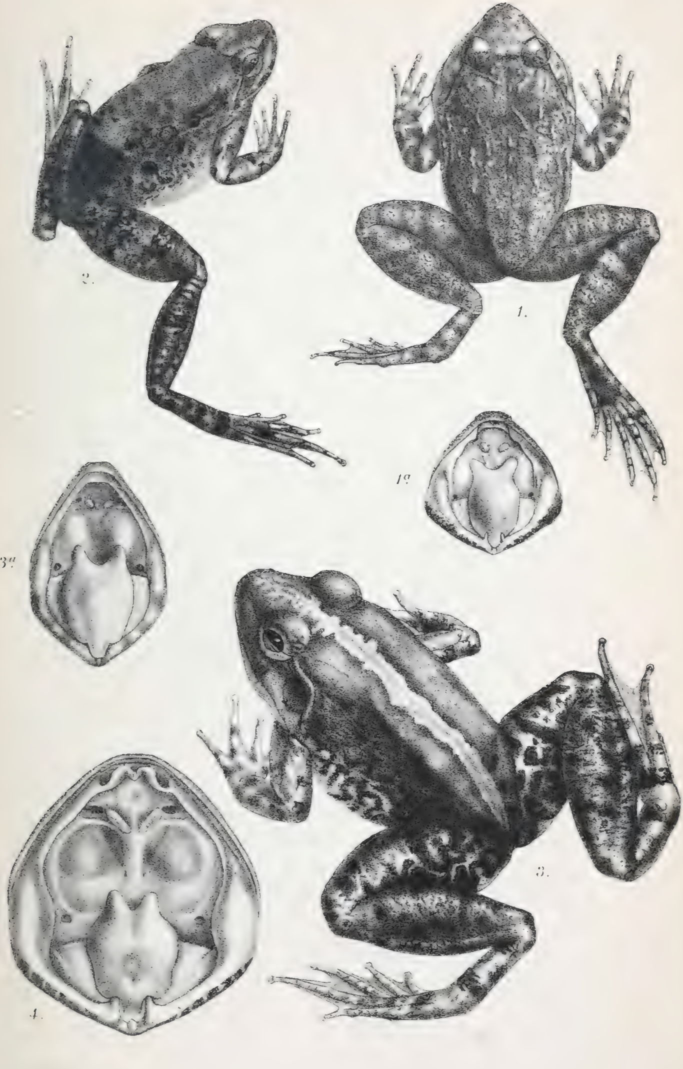

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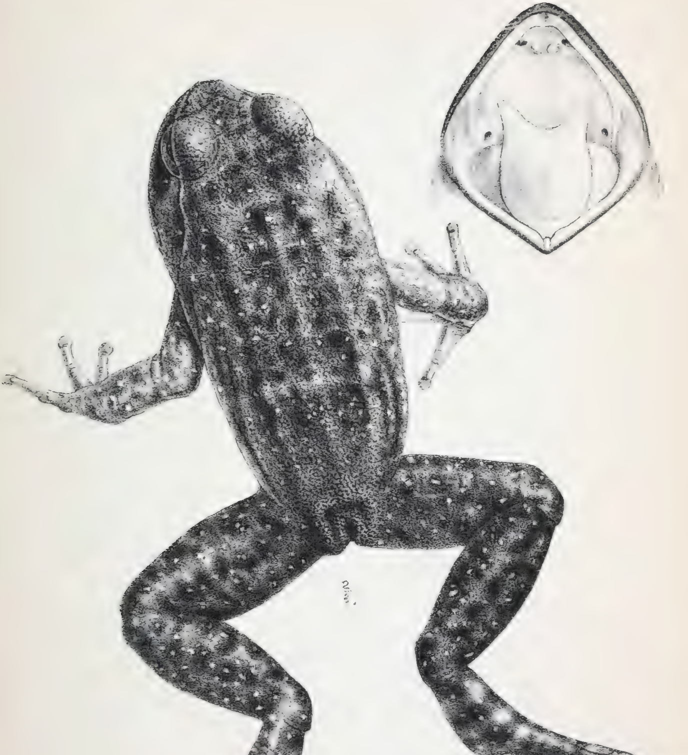
1. Rana laticeps. 2. Rana Blanfordi



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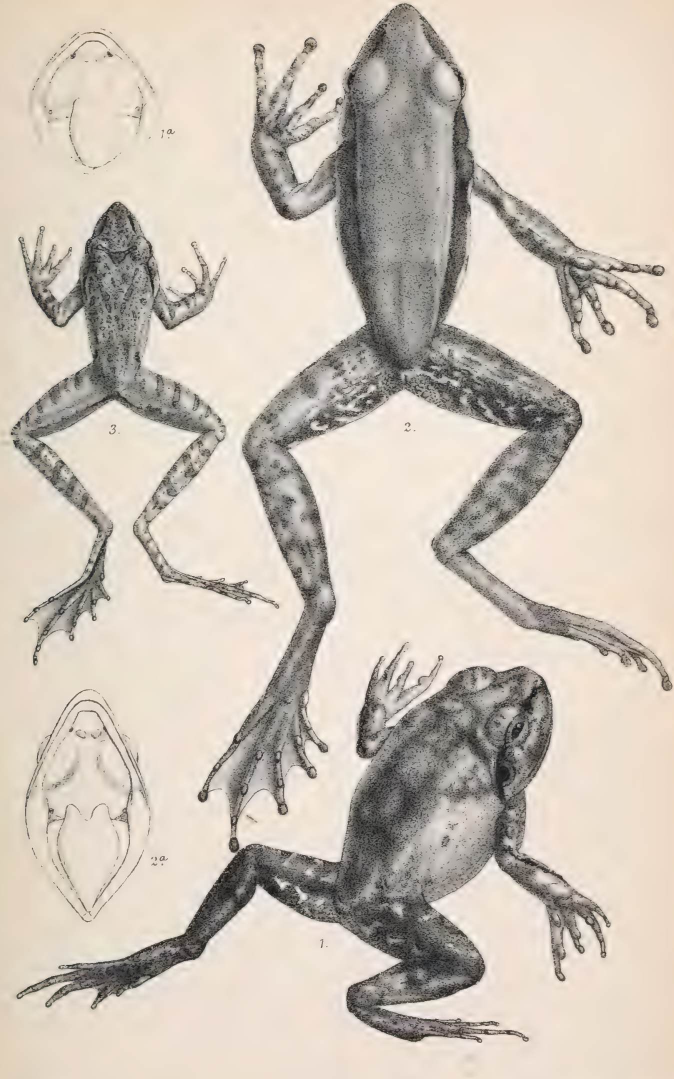
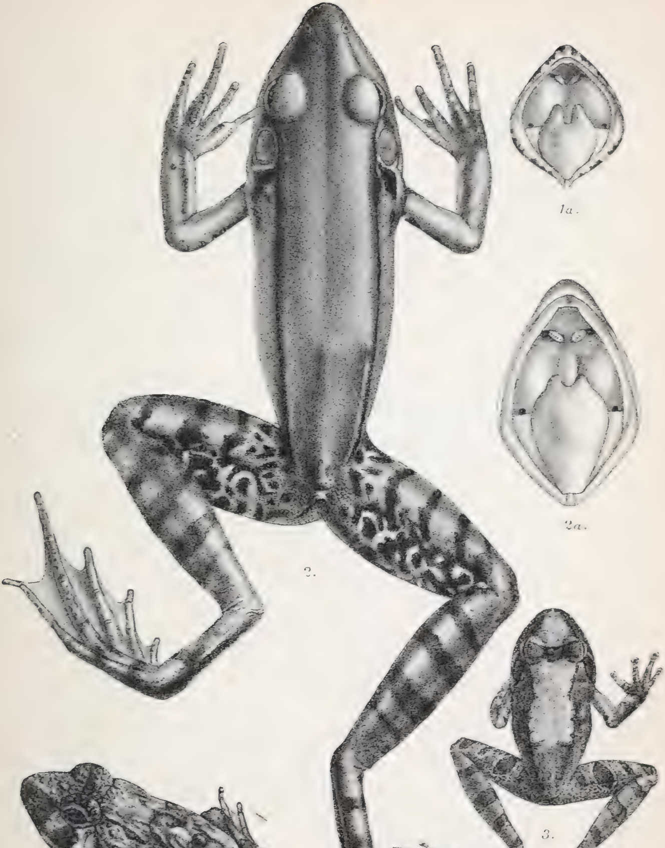


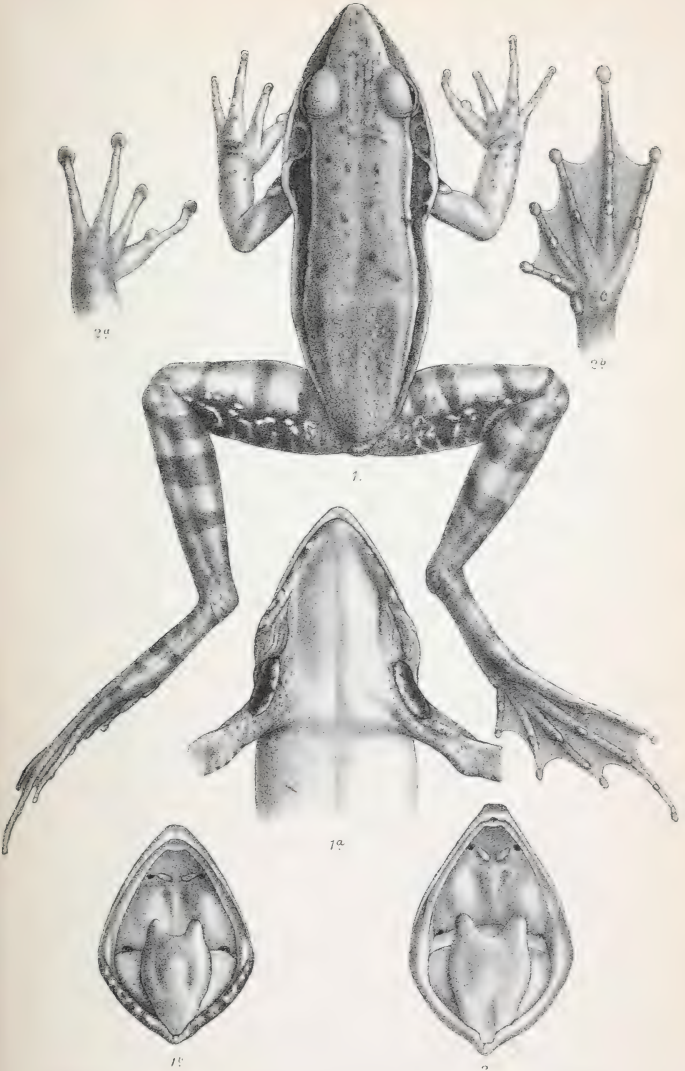
R. Mintern del. Mintern Bros. imp.

1. *Rana dobsonii.* 2. *Rana krefftii.*



R. Mintern, del. et lith. Mintern Bro's imp.

1. Rana verrucosa. 2. Rana güntheri. 3. Rana semipalmata.



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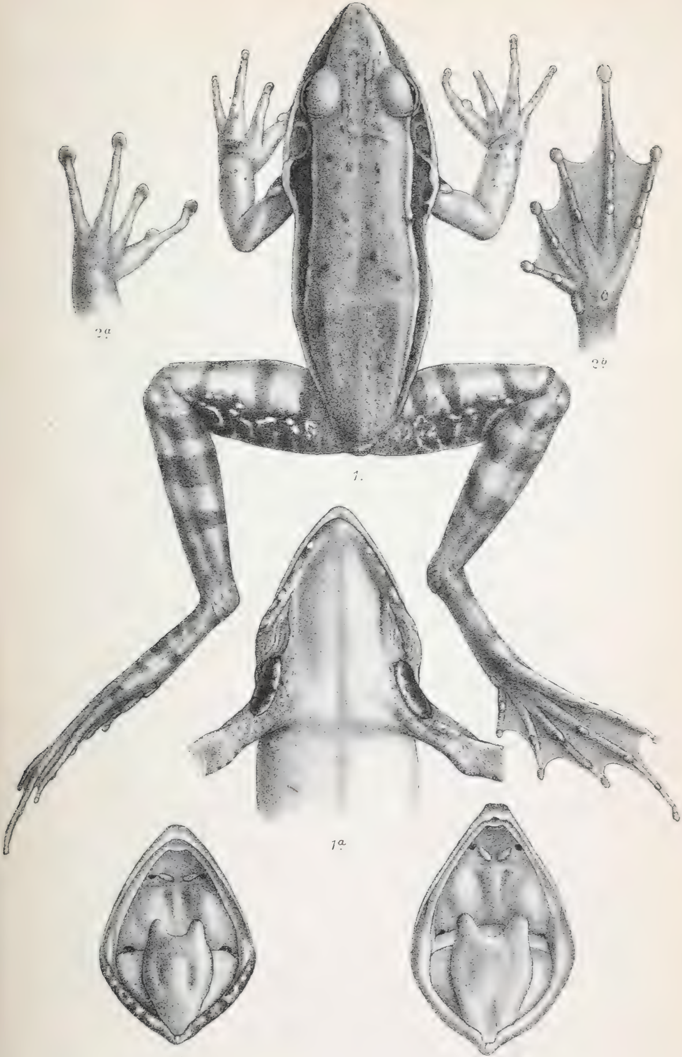
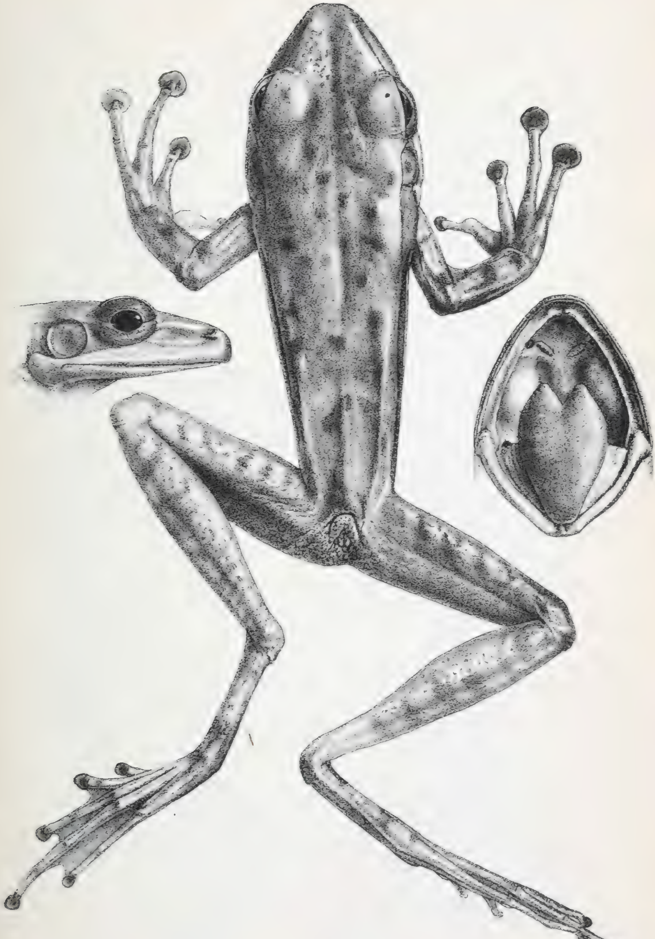


R. Mintern del

Mintern Bros. imp

BRIT. MUS. *Pl. VI.*



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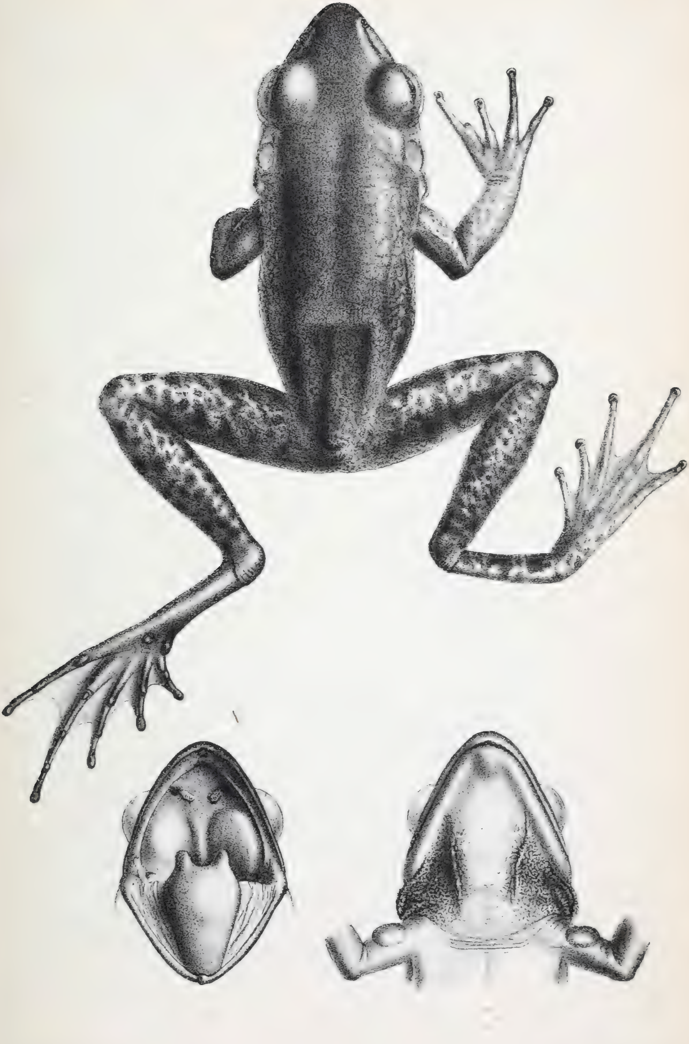

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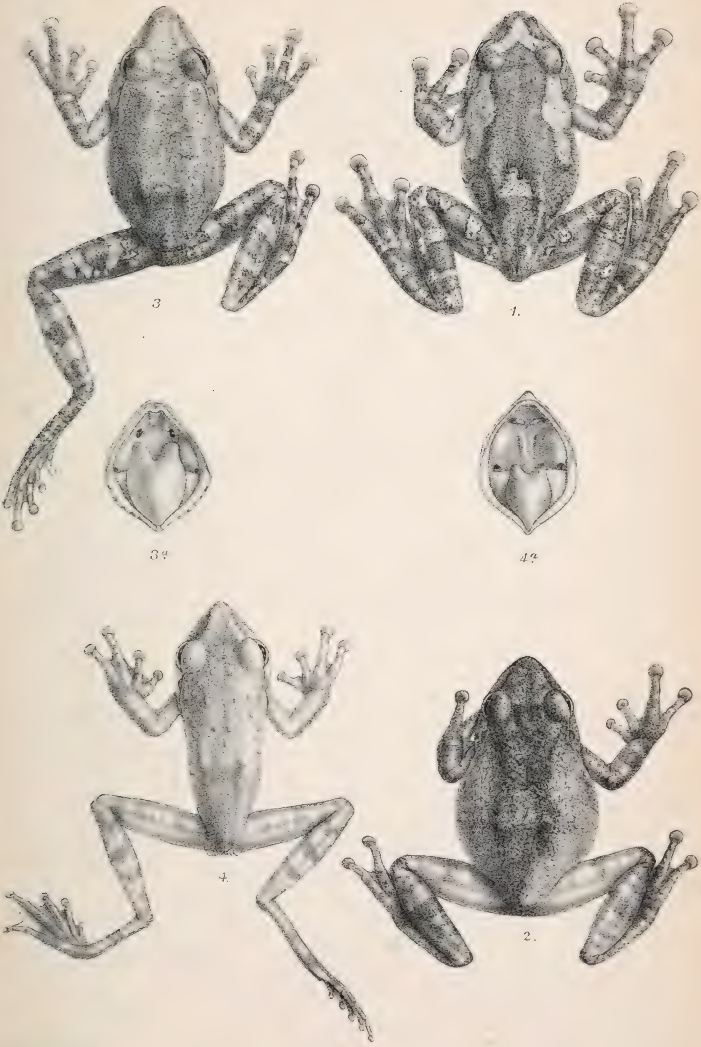
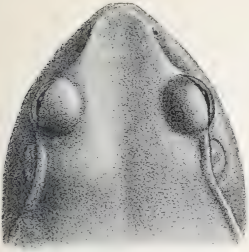


R. Mintern del.

Mintern Bros. imp.

1 Rhacophorus jerdonii. 2 Rhacophorus dubius.



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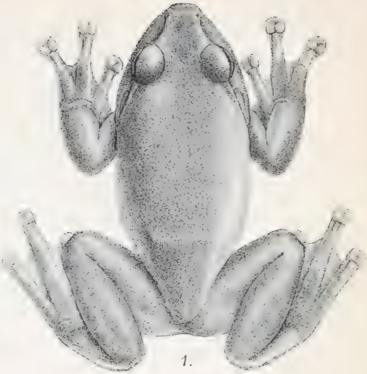

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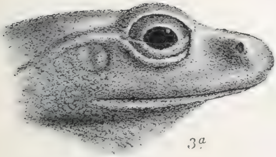

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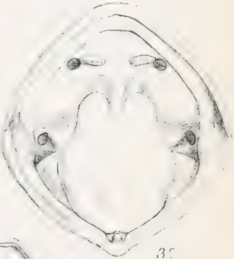

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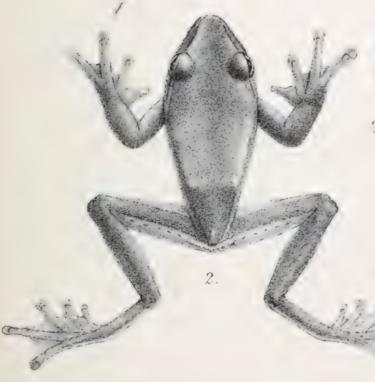

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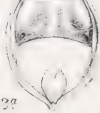
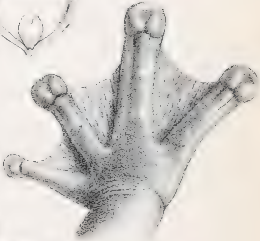


3d

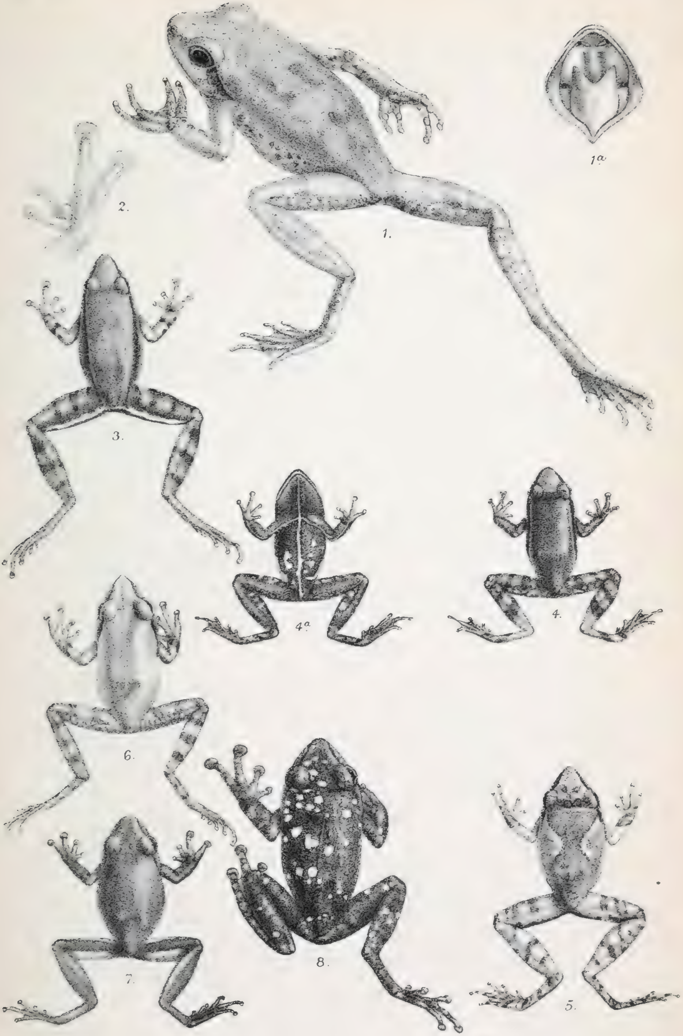


3b

R. Mintern, del et lith.

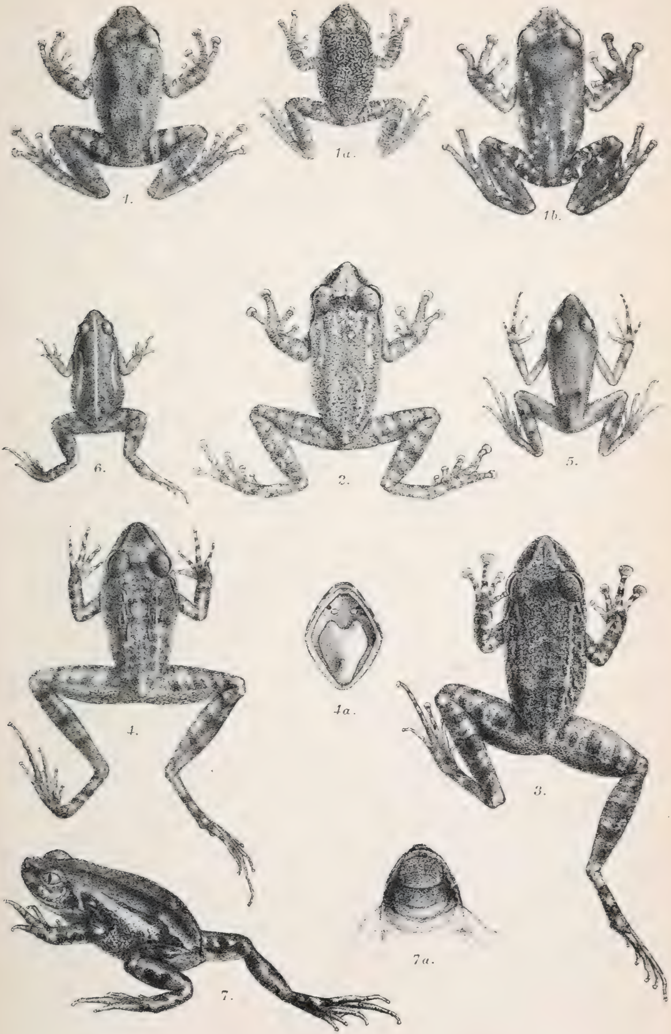
Mintern Bro's imp.

1 Rhacophorus schlegelii. 2 Rhacophorus microglossus.



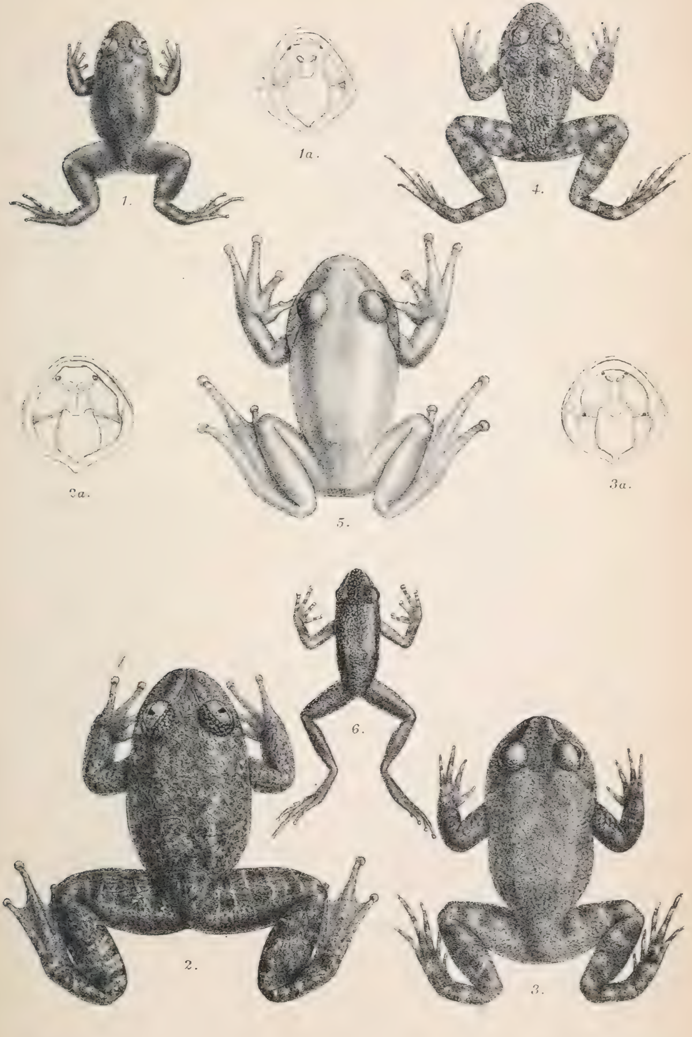
R. Mintern del.   Mintern Bros. imp.

1. *Chiromantis petersii.* 2. *Chiromantis rufescens.* 3. *Ixalus fuscus.*
4. *Ixalus hypomelas.* 5. *Ixalus oxyrhynehus.* 6. *Ixalus nasutus.*



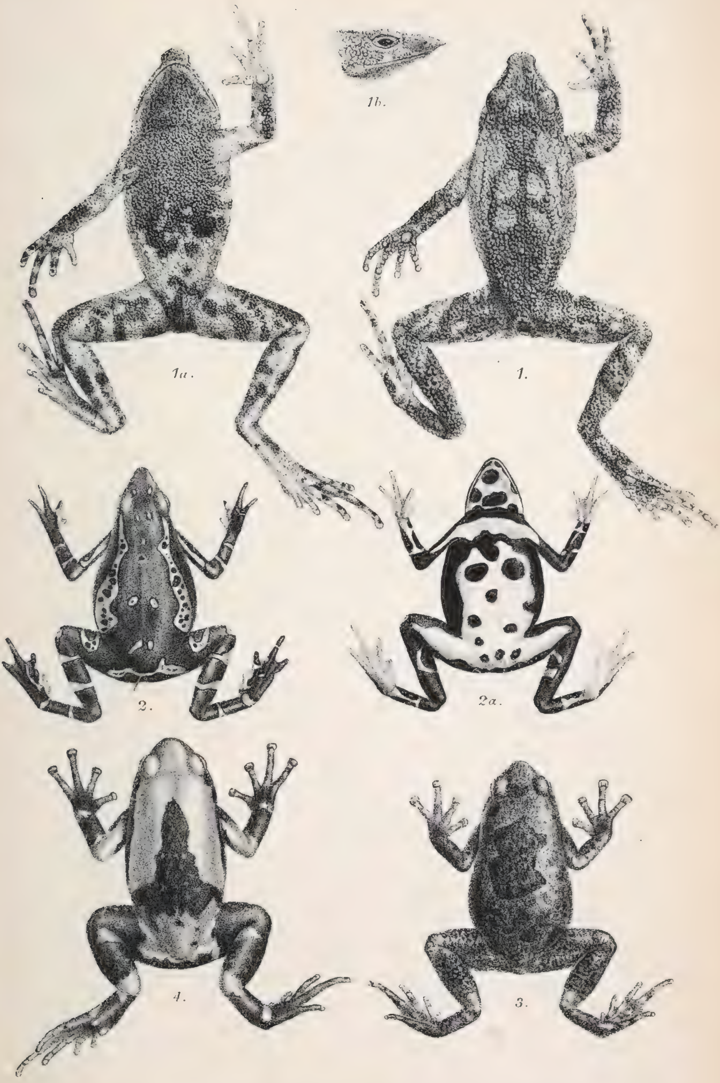
R.Mintern, del. et lith. Mintern Bro's imp.

1. *Ixalus flaviventris.* 2. *Ixalus signatus.* 3. *Cornufer güntheri.*
4. *Cornufer meyeri.* 5. *Arthroleptis macrodactylus.*
6. *Arthroleptis bœttgeri.* 7. *Cassina wealii.*



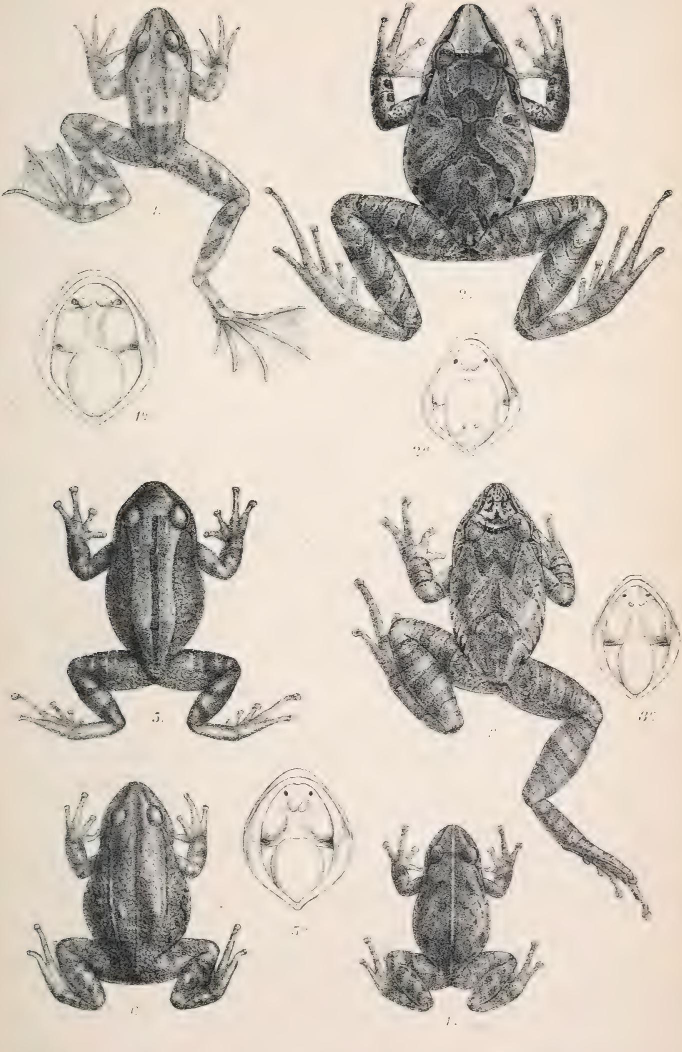
R. Mintern, del. et lith. Mintern Bro's. imp.

1. *Nyctibatrachus pygmæus.* 2. *Nyctibatrachus major.*
3. *Nannophrys ceylonensis.* 4. *Nannophrys güntheri.*



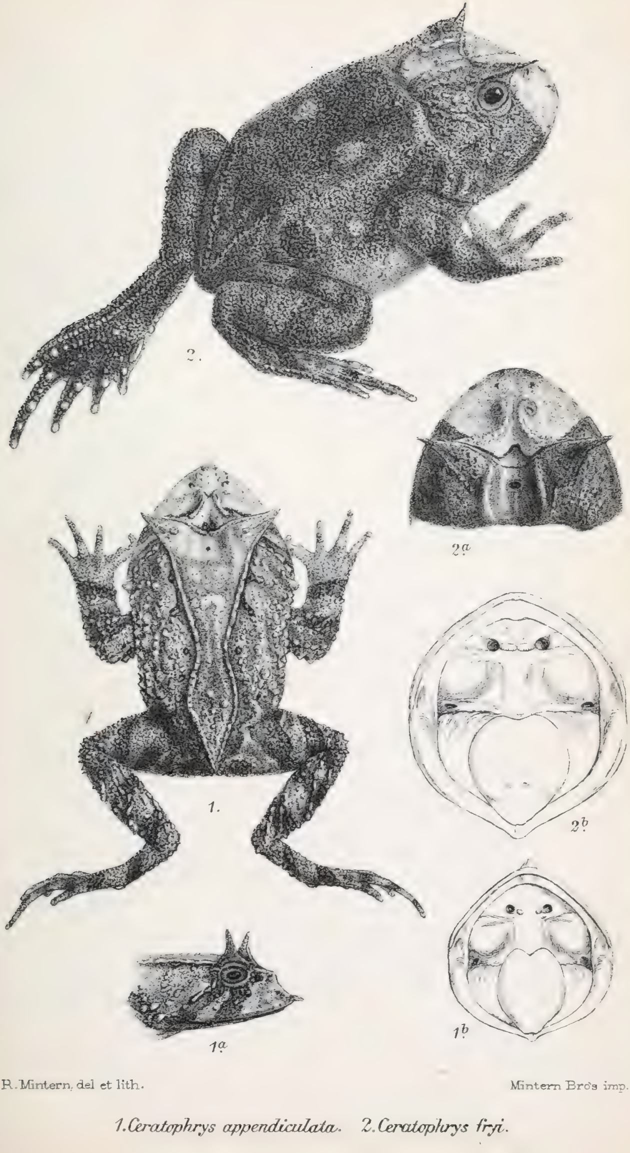
R. Mintern, del. et lith.   Mintern Bros imp.

1. Phryniscus proboscideus.   2. Phryniscus pulcher.



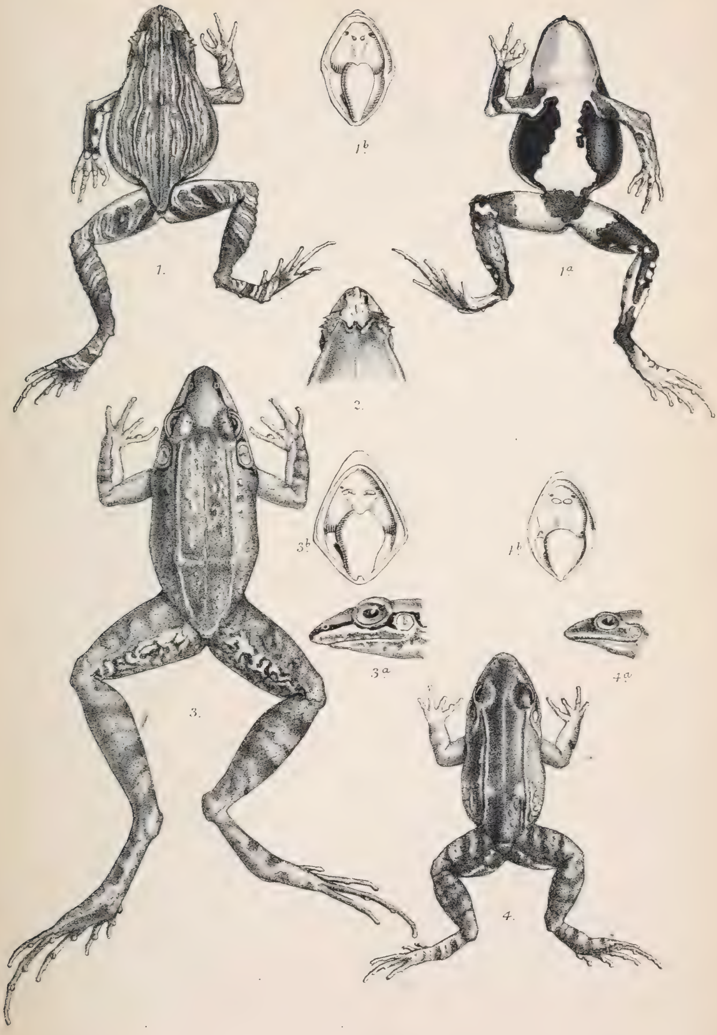
R. Mintern del. et lith. Mintern Bro's imp.

1. *Pseudis minuta*. 2. *Hylodes conspicillatus*. 3. *Hylodes surdus*.
4. *Hylodes unistrigatus*. 5. *Hylodes buckleyi*. 6. *Hylodes curtipes*.



R. Mintern, del et lith. Mintern Bro's imp.

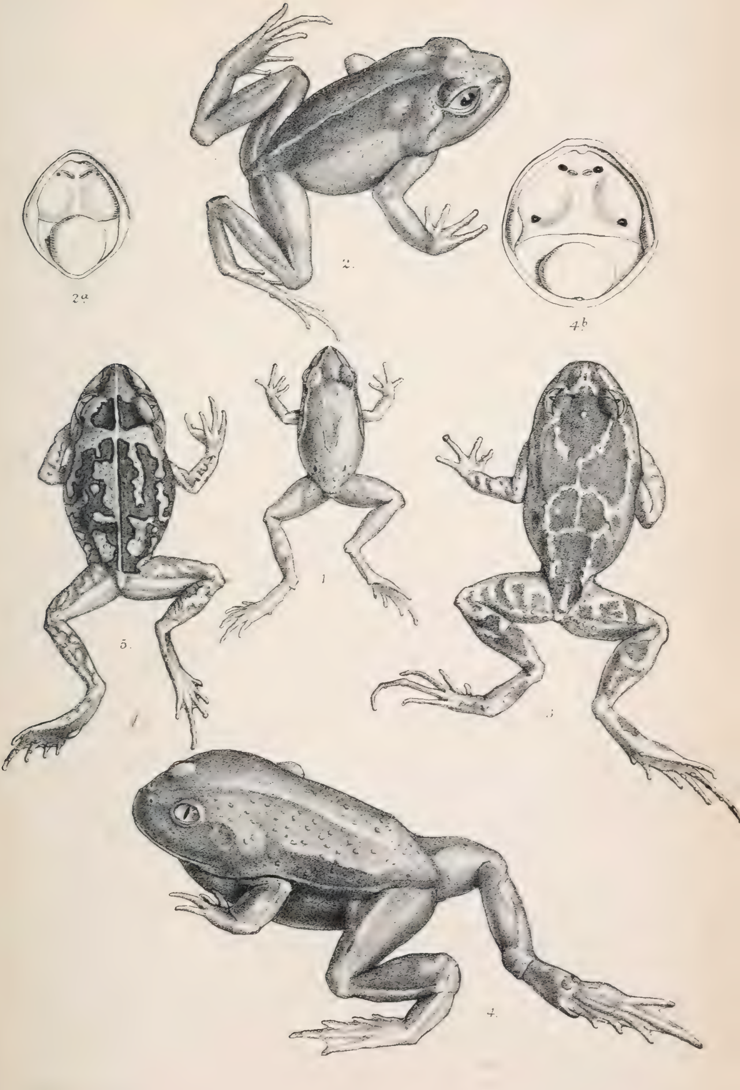
1. Ceratophrys appendiculata. 2. Ceratophrys fryi.



Edwin Wilson del. et lith.

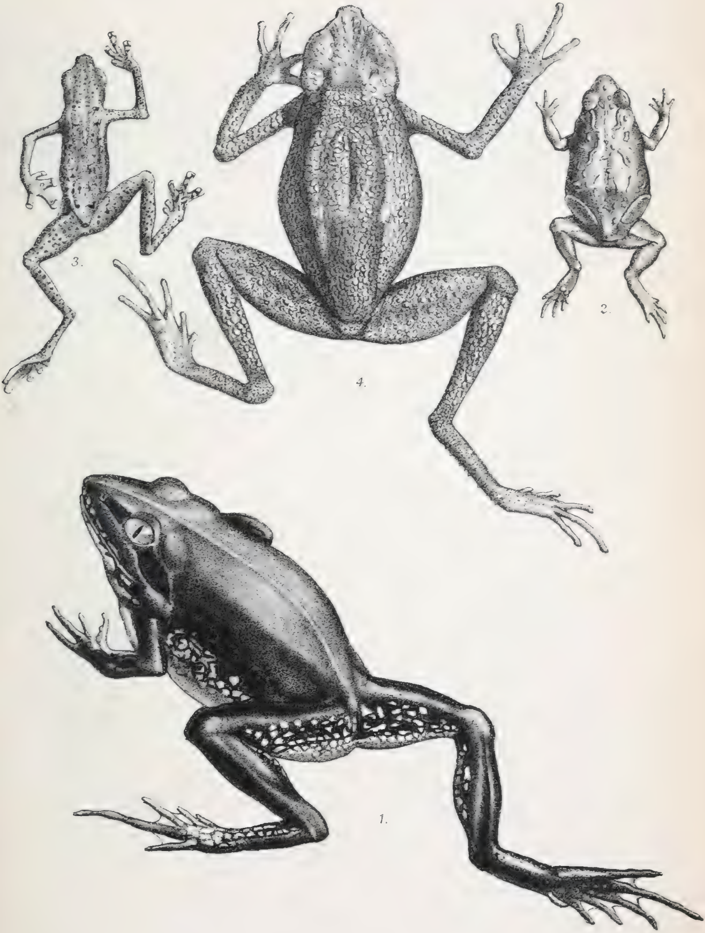
Mintern Bros. imp.

1. *Edalorhina buckleyi.* 2. *Edalorhina perezii.*
3. *Leptodactylus longirostris.* 4. *Leptodactylus albilabris.*



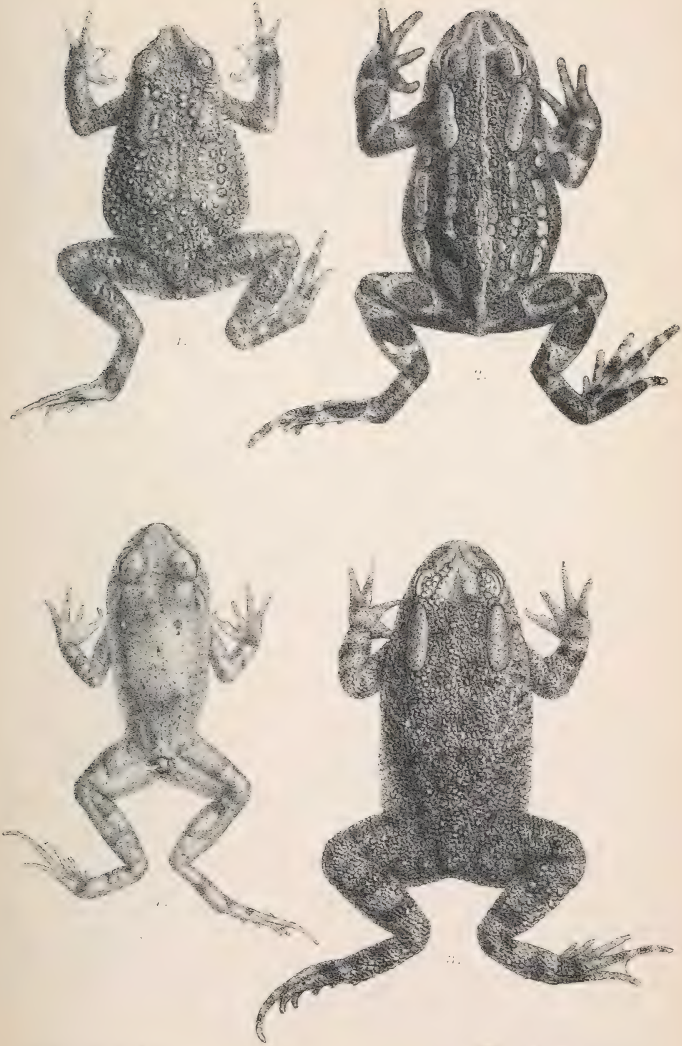
Edwin Wilson del et lith. Mintern Bros. imp.

1. Borborocœtes calcaratus. 2. Borborocœtes coppingeri.
3. Limnodynastes platycephalus. 4. Chiroleptes platycephalus.



Edwin Wilson del. et lith.
Mintern Bros. imp.

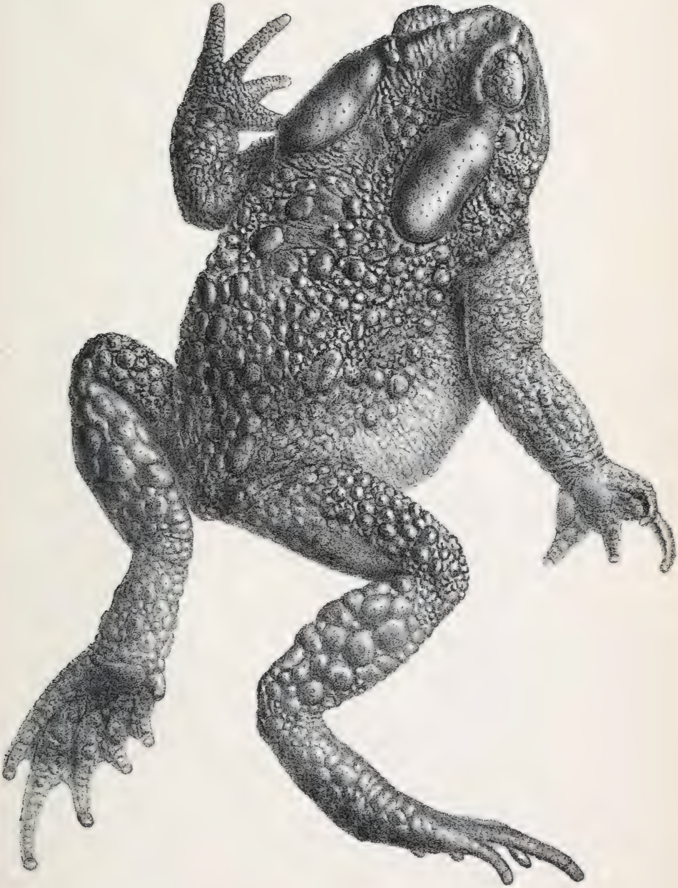
1. *Chiroleptes alboguttatus.* 2. *Pseudophryne güntheri.*
3. *Nectophryne güntheri.* 4. *Bufo leptopus.*



A. Mintern del. et lith.

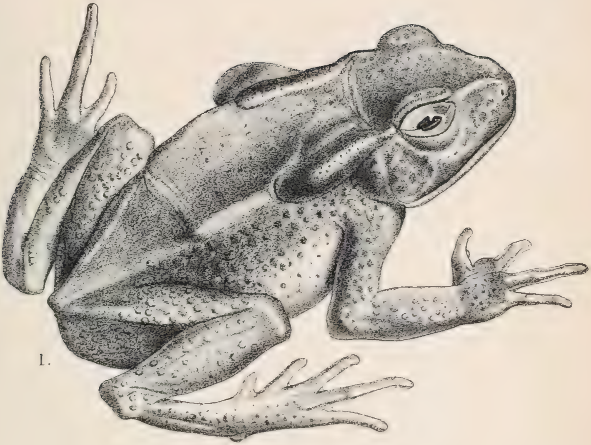
Mintern Bros imp.

1. *Bufo beddomii.* 2. *Bufo latastii.* 3. *Bufo benguelensis.*
4. *Bufo blanfordii.*

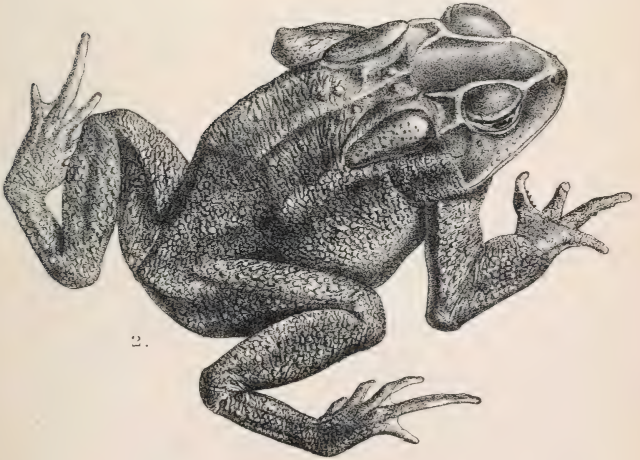


R. Mintern. del et lith. Mintern Bro's imp.

Bufo himalayanus.



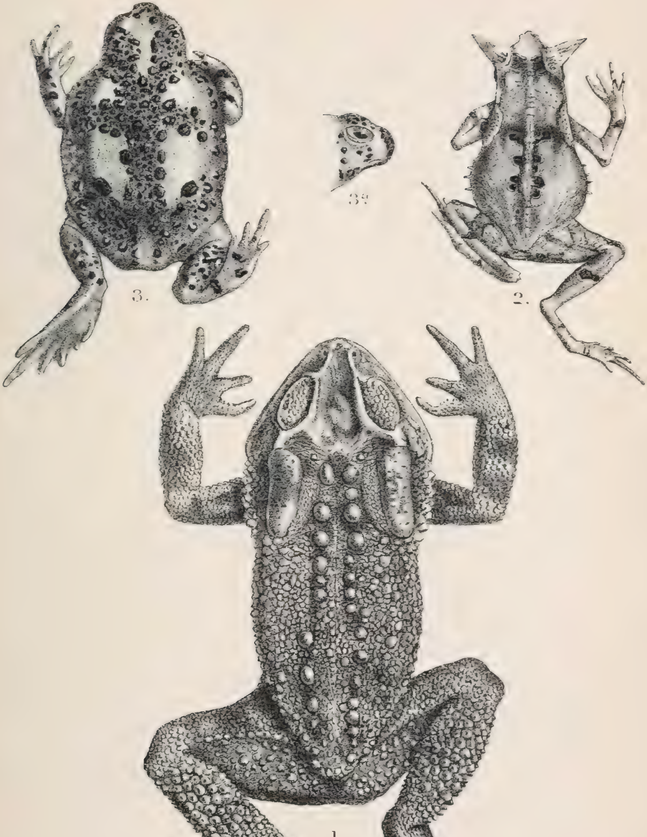
1.



2.

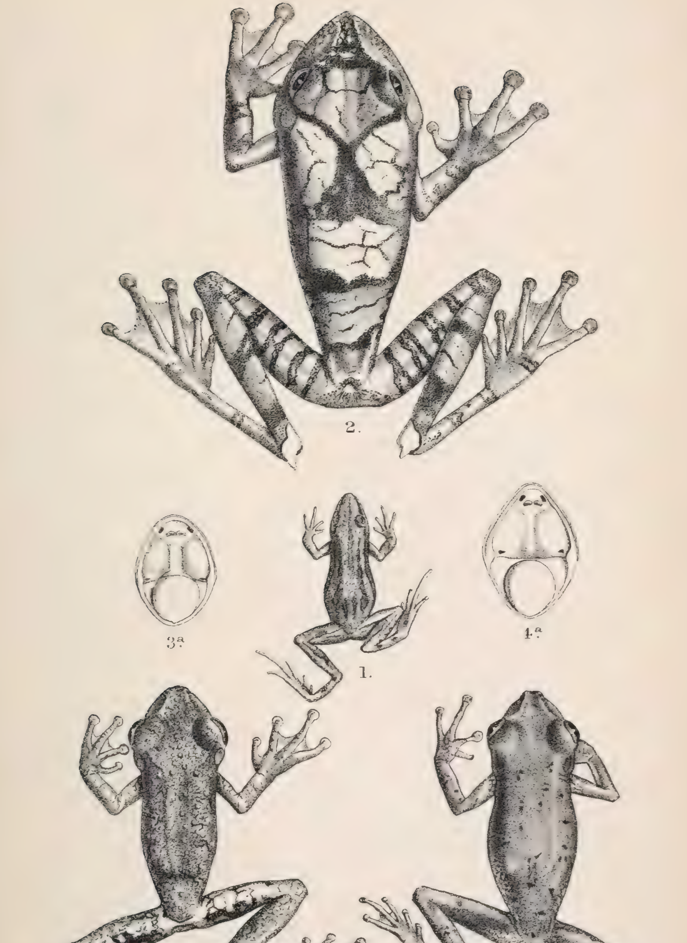
Edwin Wilson, del et lith. Mintern Bro's imp.

1. Bufo cœruleostictus. 2. Bufo parietalis.



Edwin Wilson, del et lith. Mintern Bro's imp.

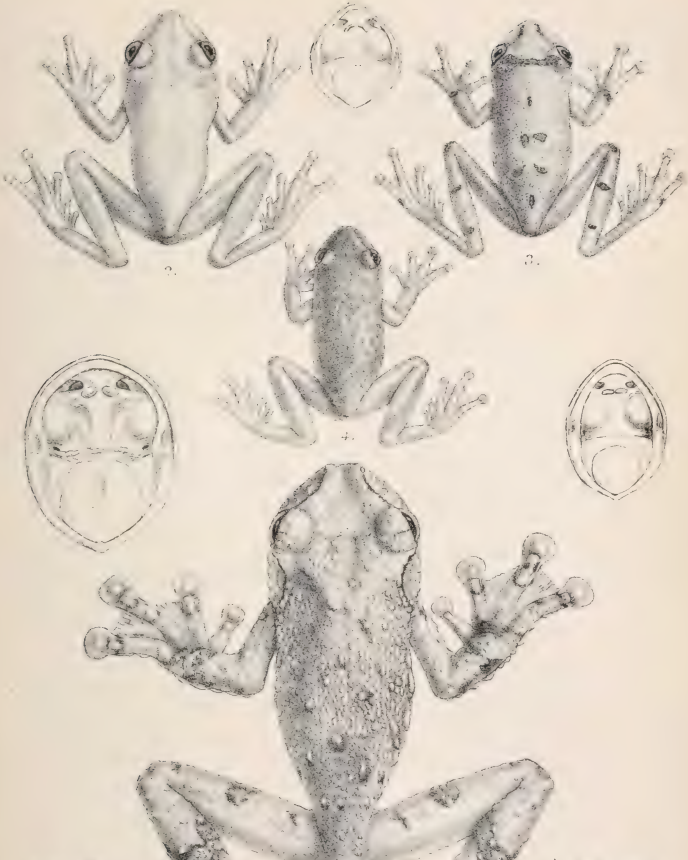
1. *Bufo microtympanum*. 2. *Bufo ceratophrys*.
3. *Notaden bennetti*.



Edwin Wilson, del et lith.

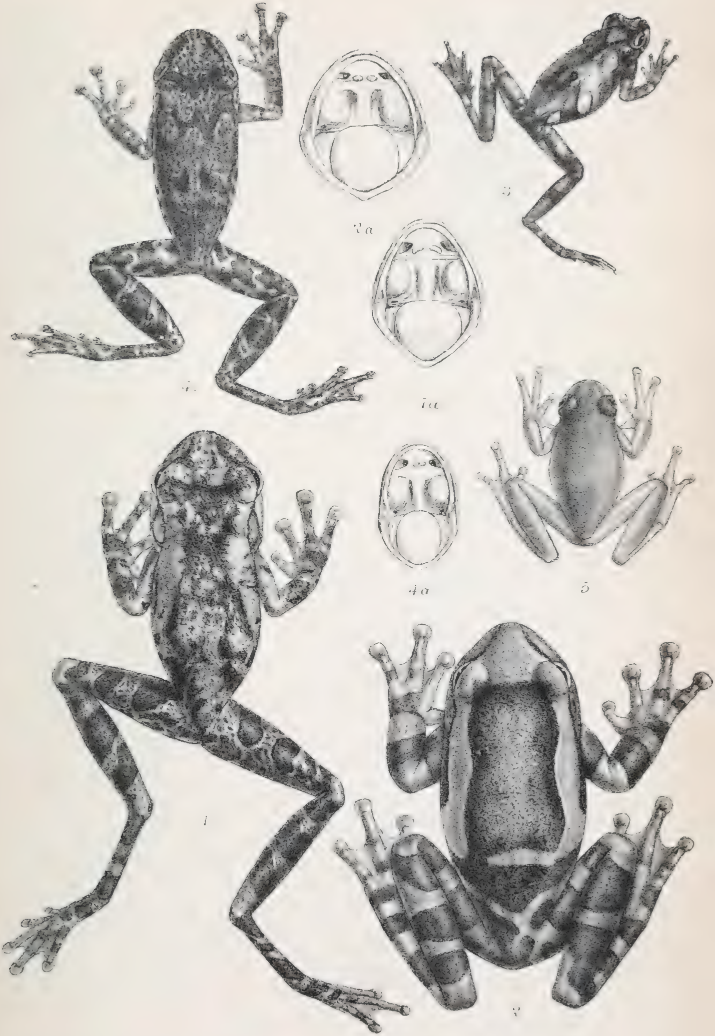
Mintern Bro's imp.

1. Chorophilus septentrionalis. 2. Hyla appendiculata.
3. Hyla inframaculata. 4. Hyla alboguttata.



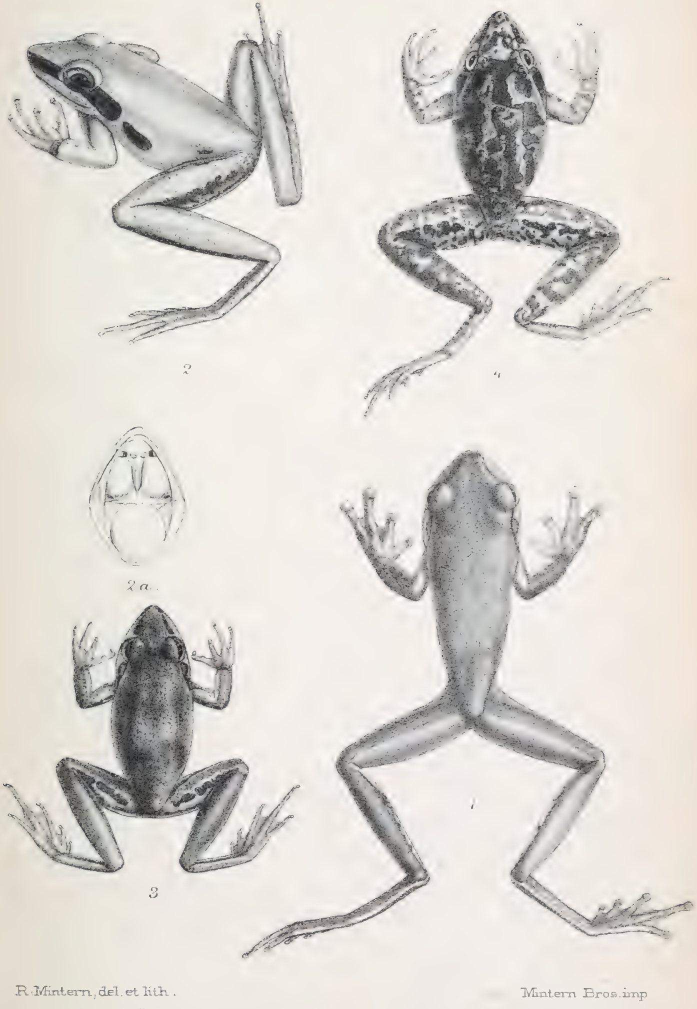
R. Mintern del. et lith. Mintern Bro's imp.

1. *Hyla tuberculosa.* 2. *Hyla granosa.* ♂.
3. *Hyla granosa.* ♀. 4. *Hyla albopunctulata.*



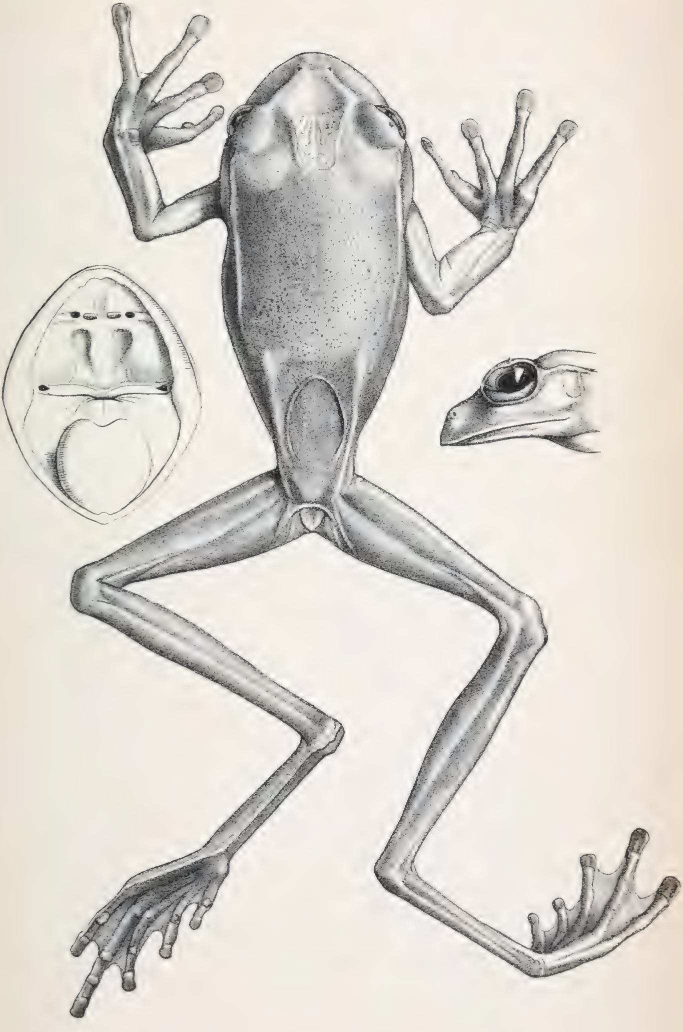
R. Mintern, del. et lith.   Mintern Bros. imp.

1. *Hyla buckleyi*.   2. *Hyla quadrangulum*.
2. *Hyla parviceps*.   4. *Hyla depressiceps*.
5. *Hylella buckleyi*.



R. Mintern, del. et lith. Mintern Bros. imp

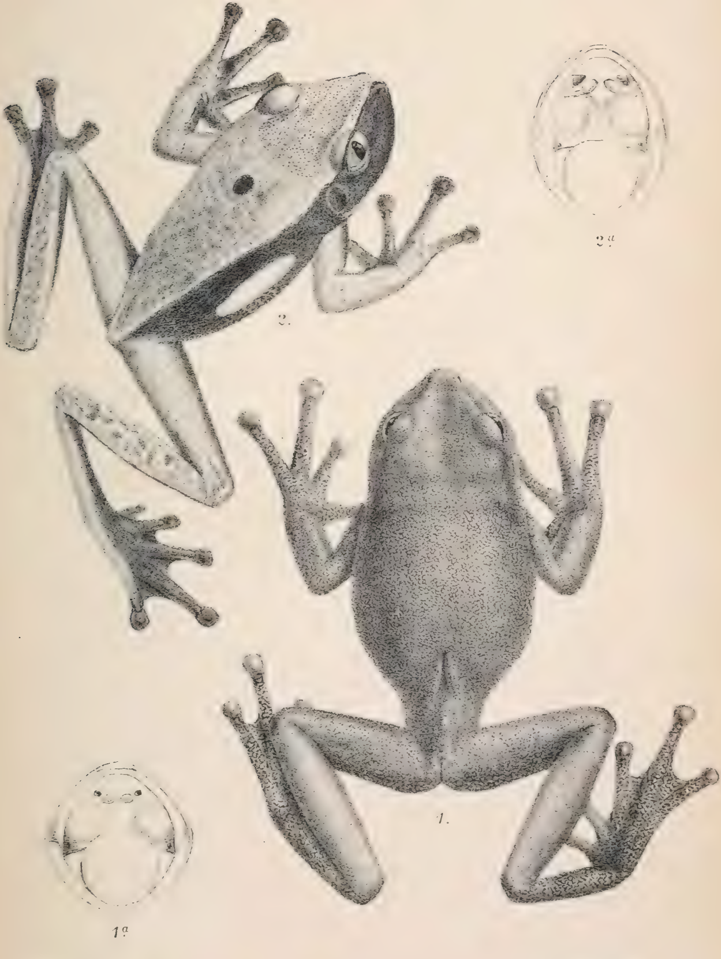
1. *Hyla infrafrenata.* 2. *Hyla nigrofrenata.*
3. *Hyla affinis.* 4. *Hyla latopalmata.*



Edwin Wilson del et lith.

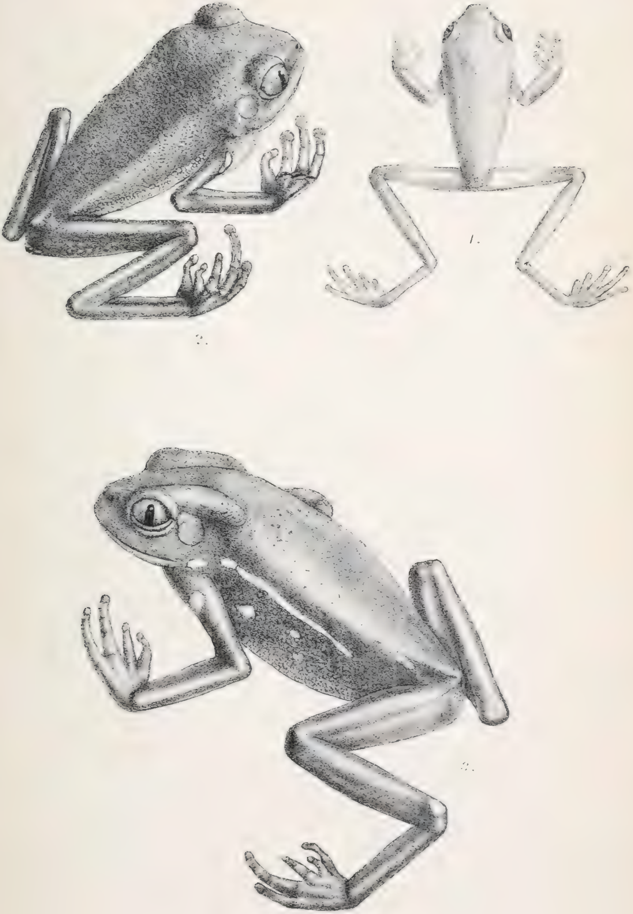
Mintern Bros. imp.

Nototrema longipes.



R. Mintern, del et lith. Mintern Bro's imp

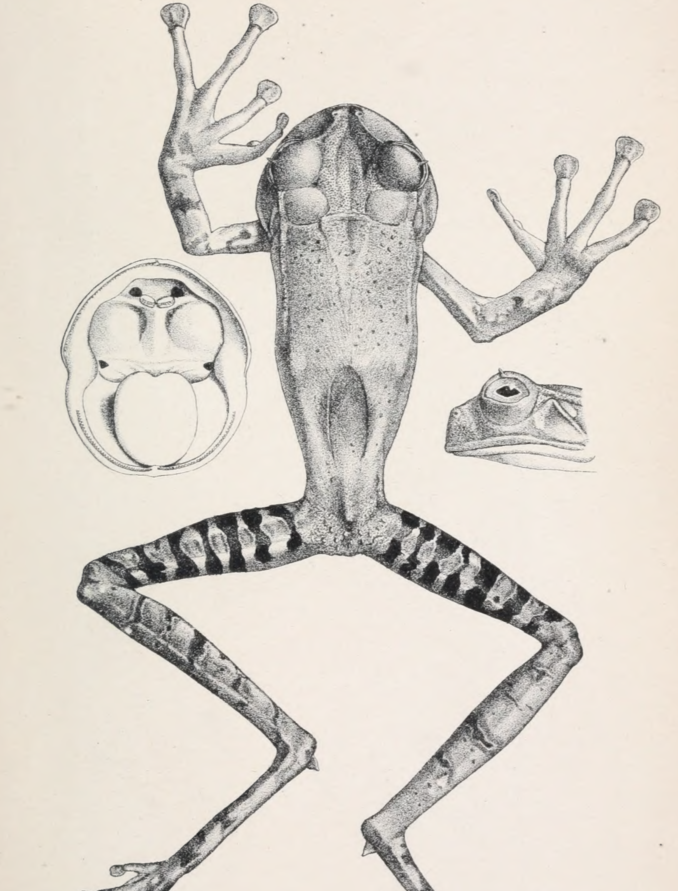
1. Nototrema plumbeum. 2. Nyctimantis rugiceps.



R. Mintern del. et lith.

Mintern Bro's imp.

1. *Phyllomedusa buckleyi.* 2. *Phyllomedusa vaillantii.*
3. *Phyllomedusa sauvagii.*



Edwin Wilson, del et lith. Mintern Bro's imp.

Amphignathodon güntheri.